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BULLETIN OF THE DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS
NATIONAL EDUCATION ASSOCIATION

APPRAISING THE ELEMENTARY-SCHOOL PROGRAM

SIXTEENTH YEARBOOK

JULY 1937
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Eva G. Pinkston, Editor.
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Appraising the Elementary-School Program

SIXTEENTH YEARBOOK

THE NATIONAL ELEMENTARY PRINCIPAL

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PREFACE

EARLIER YEARBOOKS have described specific school activities, administrative and supervisory policies, curriculum practises, and methods of teaching. This book deals with the *appraisal* of these elements in the school. It is not, however, a formal treatise on scientific research, statistical methods, or tests and measurements. The word "appraisal," as used here, means the careful and continuous effort of school administrators, supervisors, and teachers to judge the adequacy of their own school programs. The yearbook is primarily a collection of principles, technics, and devices which have been used or proposed for evaluating the program in individual schools or school systems.

Altho the yearbook's chief emphasis is on the principles and technics of appraisal, the results of particular studies are given by many contributors. These results, while suggestive, are not necessarily applicable to schools or school systems other than those in which they were obtained. So far as possible, administrators and teachers should make their own appraisals rather than accept uncritically the results obtained by others.

The contributors to this volume would be the last to maintain that the technics of appraisal which they describe are wholly satisfactory. Other administrators and teachers may be able to improve upon these procedures. In some cases they may find it advisable to combine the technics reported by two or more authors. In any event, they should make such adaptations as are necessary to meet the requirements of their own school situations.

The Editorial Committee is especially grateful to all who submitted manuscripts for this yearbook. It appreciates also the careful work of Dr. Richard R. Foster and his assistants in the Research Division of the National Education Association in editing the entire book, and in preparing the statement on guiding principles and the review of technics of appraisal. The Association's Division of Publications prepared a number of charts and proofread the manuscript. Miss Eva G. Pinkston, executive secretary of the Department, compiled the official records.

With the publication of this yearbook, Dr. Samuel Berman completes his three years of service on the Editorial Committee. His place will be taken by Miss Cecelia Galvin, principal of School No. 3, Indianapolis, Indiana. The place of Mr. R. C. T. Jacobs, who was forced by illness to retire from the Committee a year ago, has been taken by Mr. L. M. Fertsch, principal of the Pease, Mathews, and West Avenue Schools in Austin, Texas.

THE EDITORIAL COMMITTEE

LET US USE THE YEARBOOK!

HOW WELL IS YOUR SCHOOL—and mine—achieving the desirable objectives of elementary education in a democracy? What *are* the desirable objectives? How shall we determine the degree to which we are attaining them? What technics and devices are helpful in appraising a school program? These are some of the questions which this yearbook will help us to answer.

Every elementary school needs continuous appraisal of its policies, activities, and materials. Such appraisal cannot be carried on exclusively by the superintendent of schools or by a central research staff; it requires also the intelligent planning and cooperation of principals and teachers.

Most of us feel this need and try to evaluate our work as best we can. Often, however, our appraisals are unsystematic and are undertaken without sufficient knowledge of how other workers have attacked the same problems. Moreover, it is difficult to make adequate appraisals in many areas of the school program. As emphasized in this book, scientific technics fall far short of revealing all we need to know about the adequacy of our work. On the other hand, there are a number of technics and devices which can help us to do a better job of evaluation. This yearbook suggests valuable points of view, useful methods of approach, and dangers to be avoided in appraising the work of the school.

Let us—principals and teachers together—study and use this book in our own schools. Let us call it to the attention of supervisors and superintendents. Both individuals and committees responsible for various aspects of school appraisal will find much help in these pages. Teachers colleges and schools of education also may use the book to advantage in their courses.

We are grateful to the Editorial Committee, to the individual contributors, and to the members of the National Education Association headquarters staff who in cooperation produced this volume. They have made an important contribution to the advancement of elementary education.

EDYTHE J. BROWN, *President*
Department of Elementary School Principals

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CHAPTER I

THE FUNDAMENTALS OF SCHOOL APPRAISAL

A FEW GUIDING PRINCIPLES[1]

SCHOOL APPRAISAL is not only desirable; it is unavoidable. Administrators, teachers, parents, and children all form judgments of some kind with respect to the success of the school and the adequacy of its various elements. These judgments may vary from hasty inferences based on hearsay or cursory observation, to conclusions reached thru the careful collection and thoughtful interpretation of objective evidence. The purpose of this yearbook is to encourage appraisal of the latter type.

Before considering the specific methods and results of appraisal reported by the individual authors of this book, it is well to take a broad view of the field and to attempt to answer certain general questions, as follows:

1. What should be the scope of school appraisal?
2. Who should do the appraising?
3. When should appraisals be made?
4. How should appraisal be carried on?
5. What should be done with the results of appraisal?

What should be the scope of school appraisal?—School appraisal is sometimes thought of as merely the periodic administration of standardized achievement tests, followed by a comparison of the pupils' average scores with the test norms. Such a procedure, altho it has a place in a comprehensive plan of appraisal, is far from being adequate in itself. There are several reasons for this: (1) Present standardized tests do not measure all aspects of pupil development; (2) test norms are seldom satisfactory criteria for judging the achievement of children in any particular school; and (3) the comparison of average scores with the test norms reveals too little about the specific causes of good or poor achievement. The last named limitation is even more significant than the others. Obviously, little can be done to improve a school program without knowing specifically at what points it is strong and at what points weak. To be most effective, school appraisal, like the measurement of pupils, must be *diagnostic* in character.

Every aspect of the school program needs evaluation. No part is so small or insignificant that it can safely be ignored. This does not mean that everything in the program is of equal importance, or that the same amount of time should be spent in appraising each aspect. It is doubt-

[1] This statement was prepared for the Editorial Committee by the Research Division of the National Education Association.

less more important, for example, to determine whether the methods used in teaching the social studies are effective, than to discover whether the quality of paper or of other supplies used is adequate and the best obtainable at the price. Nevertheless, few would contend that the latter is not worth doing. Satisfactory school appraisal, then, must take account of the school organization, the administrative and supervisory procedures, the curriculum, the methods of learning and teaching, the socializing experiences sometimes referred to as extracurricular activities, the efficiency of the teaching staff, and the quality and suitability of school equipment. Each of these topics is discussed in a subsequent chapter of the yearbook.

The unusual difficulty of evaluating certain aspects of the school is not a valid reason for omitting them from the program of appraisal. It is, for example, much more difficult to evaluate the organization of a school than to appraise its method of teaching spelling; yet the former is so fundamental that it should not be neglected. Difficulty may be a factor in determining the methods used and the amount of time spent in appraising a particular element. It does not, however, excuse administrators and teachers from making the best possible appraisal of every element in the school program.

Who should do the appraising?—Principals and teachers should have an important part in the appraisal of their own schools. If the school system has a central research staff, the latter should consult principals and teachers both in planning appraisal measures and in interpreting the results. Such cooperation is essential not only in reaching valid judgments, but in assuring the use of results for the improvement of the school program. If research specialists are not available, a heavier responsibility for appraisal rests upon the individual principal and the teachers of his school, altho considerable guidance may be provided by the central administrative and supervisory staff. Each principal may find it helpful to appoint committees of teachers to be responsible, under his direction, for various aspects of appraisal within his school. Under favorable conditions, several principals may cooperate in formulating a uniform program of evaluation for all their schools. In any case, both principals and teachers should exercise initiative in evaluating their own work, rather than depend entirely upon superior officers to initiate and supervise such activity.

Pupils likewise may properly have a part in appraising the school. Their opinions are not always well founded and must be interpreted with great care, but such opinions will often help teachers and principals in making their own judgments of school policies and procedures. Certainly no school activity can be considered satisfactory which produces dissatisfaction or discouragement in a considerable proportion

of the children. Moreover, the school has an obligation to teach children to be honestly and constructively critical of their work and of their social institutions (of which the school is one).

When should appraisals be made?—School appraisal should be carried on continuously. The practise of making a comprehensive survey of the schools only once every five or ten years, with no effort to obtain pertinent evidence between surveys, is quite inadequate. So far as the time and size of the staff permit, information concerning the strong and weak points of the school program should be collected during each year. At least once a year these findings should be summarized and used as a basis for improving the program.

Obviously, the appraisal of some elements of the program may take longer than that of others, depending upon the scope and method of appraisal used. For example, the checking of school clubs against a list of suitable criteria may require only a few days or weeks, while a carefully controlled experiment to determine the relative effect on pupils of two different plans of grading and promotion may cover the entire school lives of the pupils involved. Moreover, during a given year the school may find it advisable to concentrate attention upon a major phase of its program, such as the curriculum or the pupil-guidance activities. Hence it is often impossible to make a *complete* report on all phases of evaluation once a year. Nevertheless, a definite plan for collecting and summarizing pertinent findings each year is essential to efficient appraisal.

How should appraisal be carried on?—Evaluation should utilize the most reliable methods which are practicable and appropriate in the particular school situation. No single method will fit all situations, and often a combination of methods is desirable. It is neither necessary nor possible to apply rigidly scientific technics to all problems of evaluation. The most important thing is the scientific method of *thinking,* in which the appraiser tries honestly and impartially to obtain as much and as accurate evidence as possible on the problem before him, and then draws only such conclusions as are clearly warranted by the evidence obtained. Careful subjective judgment of a school procedure in the light of accepted criteria is better than a conclusion based on objective data which were obtained thru an ill-conceived or poorly executed experiment.

The first step in selecting a method of appraisal is to find out how competent persons elsewhere have evaluated the same or similar aspects of the school program. Not infrequently a teacher or principal undertakes to study some phase of his work without knowing what technics are available or appropriate. Help may be obtained from reports of research by specialists in the field under consideration, from the best

books on research methods in education, from college courses in school measurement and research, and from conferences with other principals and teachers in the local schools or elsewhere. While the more precise and thoro methods are to be preferred whenever practicable, it is better to choose a simple procedure, even tho its results may not be highly conclusive, than to use an elaborate technic with which the appraiser is unfamiliar or which cannot be carried on adequately in the local situation.

All appraisal must be made with reference to criteria of some kind. These may take the form of norms on a test or rating scale, a series of objective items on a checklist or score-card, the observed behavior of particular groups of pupils, or merely an informal list of objectives sought. Such criteria are themselves subject to evaluation, and should be used only after careful consideration of their validity. It should be borne in mind, however, that school criteria or objectives can be evaluated only by a consensus of opinion. If the educational philosophies of two schools or communities differ significantly, their educational programs cannot fairly be judged by the same standards. Competent educators or laymen in general may decide that one philosophy or set of criteria is better than another. However, so long as schools are locally administered, every community has a right to establish its own standards for school appraisal.

A school program may be appraised with reference to (1) standards of pupil development, (2) standards of financial cost, and (3) standards of smooth and systematic operation. Of these types, standards of pupil development obviously should receive primary consideration. If this phase of appraisal is to be carried on accurately and comprehensively, devices for measuring pupil development must continue to be improved.

There should be close agreement between the accepted objectives of a school and the instruments which the school uses to measure its attainment of these objectives. The practise of giving standardized achievement tests containing material which the school does not intend to teach has no place in a valid program of appraisal. It is especially unfair to judge teachers or teaching methods according to pupil performances on such tests. If fundamental discrepancies exist, either the tests or the aims and content of the school curriculum should be modified. The objectives of a school may be inadequate, but their adequacy or inadequacy is a separate problem to be solved apart from the measurement of pupil achievement.

When the principal or teacher finds it impracticable to appraise a certain part of the local program satisfactorily, he should at least check that part against the conclusions of available research studies and the

recommendations of authorities on the subject. Such conclusions and recommendations are not always safe guides to follow because local conditions may be different from those under which the researches were conducted or the expert judgments reached. Nevertheless, if a teacher or principal varies his procedures from those recommended by specialists, he should usually have valid evidence in support of these variations. Such evidence can be obtained only by making careful appraisals within the local school or school system.

Statistical procedures for measuring the reliability of experimental results should be used only with a thoro understanding of their purpose and significance. It is not necessary, in appraising the work of a single school, to show whether the results are applicable to schools in general. It is helpful, of course, to know whether the repetition of an experiment under similar conditions in the same school would probably yield similar results. This, however, is impossible in many schools and classrooms because of the small number of pupils enrolled. In such cases the experiment should be repeated with succeeding groups of pupils to see whether the same or different results will be obtained. In any event, the principal or teacher needs to be sure of his ground before undertaking to compute and interpret probable errors. Many unsound conclusions have been reached thru the incorrect use of these measures.

What should be done with the results of appraisal?—As indicated above, the results of appraisal should be used to improve the school program. There is no practical value in educational measurement per se. Only as the findings are made the basis for continued improvement of educational services, can a program of school appraisal be justified. When used for this purpose, evaluation becomes an essential function of the school, and deserves adequate financial support as well as the careful attention of the teaching and administrative staffs.

Administrators should make sure that their teachers are thoroly familiar with the results of school appraisals. If the school program is to be improved, the teachers are ultimately the ones who will improve it. To do this, they need a clear understanding of the goals to be attained, and a knowledge of how closely they are approaching these goals under the present educational system.

Parents and pupils also should be given a true insight into the successes and failures of the school. Such insight will help to prevent unfounded criticisms, and to enlist the cooperation of those who should be most interested in improving the educational program.

Summary of principles—The essential points in the foregoing discussion of basic principles may be listed as follows:

1. Adequate appraisal of the school includes more than the usual program of achievement testing.

2. School appraisal should be diagnostic; that is, it should reveal the specific points of strength and of weakness in the school program.

3. Every aspect of the school program should be appraised, regardless of its relative difficulty.

4. Principals and teachers should play important parts in the appraisal of their own schools. Their responsibility for planning and initiating appraisal measures will vary according to the plan of organization and administration in the school system as a whole.

5. Within reasonable limits and under proper safeguards, pupils also may contribute to school appraisal.

6. Evaluation of the school program should be carried on continuously. Pertinent information should be collected thruout each year and summarized at least once a year.

7. Methods of appraisal should be selected on the basis of their reliability, practicability, and appropriateness in the particular situation to be appraised. A combination of several methods is often better than one alone.

8. Before undertaking an appraisal, principals and teachers should find out how competent workers elsewhere have evaluated similar elements of the school program.

9. Careful subjective judgments formed in the light of valid criteria are better than conclusions based on objective data from a poorly planned or carelessly executed experiment.

10. Every appraisal should be made with reference to specified criteria of some kind. Such criteria should themselves be carefully evaluated before they are used.

11. Of the several types of criteria which may be used, those concerned with pupil development should receive first consideration.

12. There should be close agreement between the accepted objectives of a school and the instruments which the school uses to measure its attainment of these objectives.

13. When it is impracticable to determine the merits of local school practises directly, these practises should be appraised with reference to the findings of available research studies and expert opinion outside the school.

14. Statistical technics for determining the reliability of experimental results should be used only with a thoro understanding of their purpose and significance.

15. The results of appraisal should be used to improve the school program. It is essential that classroom teachers, as well as principals, be fully informed of these results.

16. Parents and pupils also should be given accurate information concerning the strong and weak elements of the school program, so that they may help to improve it.

Scope of this yearbook—The following chapters of this book deal with many aspects of appraisal in the elementary school. A majority of the authors emphasize broad technics or specific instruments of evaluation. Results of particular studies also are given in many articles, but such results are of secondary importance here because they usually apply only to the school or school system in which they were obtained. The primary contribution of the yearbook lies in its descriptions of actual experiences in selecting, planning, and carrying out procedures for evaluating the school.

The contributions of different authors vary widely in scope. Some deal with very informal methods of evaluation, while others describe rather elaborate experiments involving two or more different types of school procedure. Some merely present criteria for judging the merit

of a school policy or plan of organization; others show how such criteria were applied in a specific situation, and what results were obtained. A few articles report only the findings of a particular appraisal. One chapter is devoted almost entirely to the characteristics, uses, and limitations of school tests. Another chapter reviews the broader technics of research, and attempts to show the place which each may occupy in a program of school appraisal.

No chapter of the yearbook is a comprehensive treatment of the subject indicated in its title. The articles in each chapter merely provide illustrations of appraisal within a very broad area of the school program. In spite of this limitation, the reader will find here an abundance of stimulating and helpful material. Additional reading will enable him to fill many of the gaps. A list of selected references for further study is given at the end of each chapter except the first.[2]

Other articles in this chapter—The next two articles are important parts of this chapter on "fundamentals." In the first one, Powers gives a broad overview of criteria by which the success of a modern elementary-school program may be judged. In the second article, by Smith, some of the major technics of evaluation are introduced and their significance in education explained. These two articles are well worth reading before turning to the later chapters.

[2] For further material on the fundamentals of school appraisal, consult the references listed at the end of Chapter X, "A Review of the Technics of Appraisal."

TO ARGUE that most research should be conducted in graduate schools, laboratories, and research bureaus is to underestimate the importance of field situations in terms of the application of the results of educational investigation and the intellectual and professional growth of approximately one million teachers in this country, through the discovery and solution of important educational problems under normal field conditions. From this point of view, competent field workers have an important dual obligation: one relating to the practice of teaching, supervision, or administration, and the other relating to problem solving in their respective areas of responsibility.—Good, Carter V.; Barr, Arvil S.; and Scates, Douglas E., *The Methodology of Educational Research,* D. Appleton-Century Co., 1936, p. v. (Quoted by permission of the publishers.)

CRITERIA FOR JUDGING THE SUCCESS OF A SCHOOL PROGRAM

LEVERSIA L. POWERS

Director, Primary and Special Education, Chester, Pennsylvania

AT THE CLOSE of the school year 1935-36, the report card of a certain pupil in a six-grade elementary school read as follows:

This is to certify that *Lucille Cook* has been placed in the *seventh grade* for September, 1936.

(Signed)
LEVERSIA POWERS,
Principal.

June 17, 1936.

The accompanying grade-school certificate read:

This is to certify that *Lucille Cook* has satisfactorily completed the work of *Grade VI* and is promoted to *Grade VII*.

E. W. BROOME,
Superintendent.

(Signed)
LEVERSIA POWERS,
Principal.

June 17, 1936.

These statements were ordinary enough. There were many others like them. But what did they mean—to the teachers, to the principal? What did "satisfactorily completed the work of Grade VI" mean to all the "Lucille Cook's"? Had the school years been milestones along the way of conscious progress, or had they been merely hurdles?

Objectives of the school program—How can we go about evaluating the work of these years? Let us examine briefly the objectives which we wish children to attain by the end of the sixth grade:

1. *Essential abilities*—to read, with understanding, any material within the experience level of the pre-adolescent child; to use with accuracy and understanding the fundamental operations in numbers; to express ideas correctly, forcibly, and in an interesting manner thru written language, line and color, bodily rhythm, music, and handicraft; to interpret many phases of everyday life thru the application of historical, geographical, and scientific concepts, understandings, and facts.
2. *Basic skills*—in muscular control and coordination; in the use of books; in the use of materials and tools of the arts and sciences; etc.
3. *Desirable attitudes*—toward work and play; toward other people; toward social institutions; etc.
4. *Appropriate social habits*—friendliness, good manners, trustworthiness, self-control and poise, leadership and followership, etc.
5. *Suitable interests*—in recreational activities; in vocational possibilities; in avocational pursuits.
6. *Good taste*—as shown in the selection of color, line, and form in dress, in decorations, etc.
7. *A well-balanced personality*—mental and emotional health, stability, cheerfulness, open-mindedness, and the ability to compensate in socially acceptable ways for personal deficiencies and failures.

These seven objectives, in the writer's judgment, are the criteria against which the success of a modern school program should be measured. Surely no school appraisal can be considered complete unless it takes all of them into account. The following paragraphs discuss each of these criteria in turn, attempting to indicate the kind of results which must be obtained if the school program is to be considered successful. Some of these results can be measured objectively, while others can be appraised only by careful observation and judgment.

Are essential abilities being developed?—Of the four types of ability mentioned above, none is more important than reading ability. This includes the ability to read silently with satisfactory speed and comprehension, to enjoy poetry and drama thru effective oral reading, and to appreciate the best in literature. We cannot, of course, expect pupils to read and appreciate material that is too difficult or outside the range of their experience. It would be absurd, for example, to expect the average sixth-grade child to read a chemistry textbook or technical stock-market news with adequate understanding and pleasure. On the other hand, a school which calls itself successful must make sure that its pupils are able to do all useful types of reading at the appropriate levels of speed and comprehension.

Fortunately, it is no longer difficult to measure objectively the elements of speed and comprehension in reading; several good standardized tests are available for this purpose. It is much more difficult to measure such outcomes as appreciation and good taste in reading.

In the field of arithmetic, the child needs to understand the concepts of number so that he can put the fundamental operations to use in specific situations. How common is the occurrence of a child's having memorized certain facts in arithmetic which he cannot apply when the opportunity arises. The school may evaluate its work as satisfactory when, after six years of training in this field, most of its pupils have a deep understanding of the significance of number relations in their daily lives, and can handle the basic number operations intelligently and with reasonable speed in any ordinary situation. The school must evaluate its work in arithmetic as poor if all learning in this field consists of abstract memorization, and if the facts memorized are not interpreted in terms of everyday living. Both computational and reasoning abilities in arithmetic can be measured with considerable precision by means of the best available tests.

A third type of ability—the ability to express ideas—is not limited to any one medium of expression. This would be a barren world indeed, if all messages were conveyed thru the single medium of language. The successful school must see to it that each child has, in addition to language, one or more other ways of expressing his ideas, such as drawing,

painting, music, bodily rhythm, or handicrafts. Obviously the standards of achievement cannot be the same for all pupils, since children vary widely in their interests and native capacities within each field and from one field to another. However, unless the majority of pupils have acquired some ability in non-verbal expression, their school hardly deserves a high rating.

In appraising children's ability to express themselves, it is important not to limit the appraisal to the mere mechanics of expression. Effective writing, for example, requires much more than the ability to handle punctuation, capitalization, and grammar correctly. It calls for a sense of the relationships among ideas, and a uniqueness of style which accurately expresses the various shades of meaning which the writer intends to convey. In all fields of expression, ability to handle the mechanics is more easily measured than are the less tangible elements which make the expression truly effective. Nevertheless, principals and teachers should not abandon their efforts to appraise these important tho elusive outcomes of instruction.

In the social studies, as in arithmetic, schools have too often been content to measure results in terms of facts memorized by the pupils. Traditionally, the subjects of history, geography, and civics have been presented as separate bodies of material to be learned, irrespective of the child's needs. The inadequacy of these procedures is rapidly being recognized. We are realizing that each child is an integral part of presentday society. While many social problems are beyond his understanding, many others can be made clear and interesting to him. He should know and appreciate the social institutions of the community—the fire department, police department, local government, grocery store, street cleaners, postmen, transportation and communication facilities, public utilities, schools, churches, and so forth.

Does the child understand how and why these institutions came into being? Does he realize how dependent people are upon one another? Has he acquired any appreciation of the human problems which arise from the geographical environment? Does he see the relationship that must exist between the country and the city if the people of both localities are to be comfortable and happy? Does he understand how certain situations in history have caused the development or the breakdown of social institutions? Has he any conception of how the climatic and social conditions of far-away places help to regulate his everyday life? Has he acquired sufficient understanding to be of help to him in discharging his civic duties? Unless such questions as these can be answered in the affirmative, we cannot say that the elementary school has achieved its proper objectives.

The adequate evaluation of these four abilities—in reading, in arithmetic, in expression, and in the social studies—is not an easy task. Objective measurement, however, offers much more help than most of us realize. We are no longer limited to tests which measure merely the child's ability to recall unrelated facts. Tests of ability to *use* knowledge and skills are being gradually developed and improved. Let no one assume that such abilities are forever beyond the reach of appraisal.

Are basic skills being achieved?—"Skill" is not widely different from "ability." The writer prefers, however, to think of skill as something which may be acquired more readily by drill. A person may have a great deal of skill in something whose nature or purpose he does not understand at all. A workman in a factory may learn to feed a machine its bits of metal with a high degree of skill, and yet know nothing about the construction of the machine or the purposes of the product which it helps to make. In education we may, for example, confuse a mere acquiring of *skill* in arithmetic with the *ability* in arithmetic which children should have. That is why the use of numbers in daily life was classified above as an ability rather than as a skill. Conversely, the writer would list as skills those things which a child learns to do thru continued repetition, such as certain types of muscular control and coordination, the mechanical use of books, and the manipulation of materials and tools in the arts and sciences.

Muscular control and coordination are, of course, partly dependent upon the native capacity and the maturity of the individual. In most persons, however, muscular skills are readily developed by the right kind of training. Consider, for example, the singer's control of the muscles of his throat, the tennis player's control of his wrist muscles, and the expert penman's control of his arm and finger muscles. Training for specific skills should be planned in relation to the child's growth as a whole. The attempt to develop a high degree of skill in one field should not be permitted to interfere with the development of other important skills. The school must, therefore, evaluate its work with reference to the needs of the whole child.

The effective use of books calls for skill in utilizing the table of contents, index, appendix, glossary, and so forth. Here, as in the case of all skills, a mastery of mechanics must precede their intelligent and effective application. In the upper grades, the program for insuring such mastery will include some library science, as well as practise in the use of dictionaries and encyclopedias.

Just as a child cannot be said to have any real ability in the use of written language unless he can use it to communicate his ideas, so he cannot be said to have skill in the arts and sciences unless he knows the technics of manipulating the materials and tools thereof. He must

know how to hold a brush, how to place his paper, how to move his crayon, how to handle weights and measures, and so forth. It is not possible to acquire any real ability without acquiring these basic skills. It is possible, however, to acquire such skills without acquiring any appreciable ability to use them for significant purposes.

Perhaps the line between skills and abilities has been a little finely drawn, but in attempting to evaluate the work of an elementary school, the writer has found it helpful to consider whether the child who has acquired certain skills has also the necessary understanding and emotional attitude to make conscious use of those skills in ways that are personally and socially valuable.

Are desirable attitudes being established?—If we are to live in a democratic country, where the welfare of all depends upon the attitudes of every individual, the school must help to instil in children those attitudes and understandings that are conducive to better living together. Unless the work of the school actually makes a difference in children's attitudes, it is not education; it is mere training. We can judge the results of our work as worth the great amount of time, money, and effort expended, only when we have helped produce a generation of people whose attitudes are better than they would have been without the influence of the school.

The study of man in relation to his environment, commonly called geography, should help the child to understand the problems of all human beings. As a result, the child should not consider anything that is foreign to him as queer, but rather as only different. He should understand that modes of living are the results of men's efforts to adapt themselves to their environments, and that if he and his ancestors had been subjected to an environment different from their own, they probably would have developed different ways of living.

When children have studied the rise and fall of nations and of social institutions, we want them to have much more than a store of facts which they can flash forth when the proper button is pressed. They should also have acquired a genuine desire to use the past experience of the race as a means of further understanding and improving the conditions of modern life. We have, for example, historical records from centuries past of great civil wars—records of man's struggles for the social improvement of the masses. The study of these things should not represent to the child a mere rehashing of the dead past, but should help him to appraise the social upheavals of today with an attitude of toleration and understanding. The school which evaluates its work thoroly will look for such outcomes.

We must appraise our success also against a standard of good sportsmanship. Sometimes it has been the policy of schools to leave sports-

manship to games. We have long assumed that sportsmanlike attitudes were to be developed and exhibited only on the baseball and football fields. Shall we not judge the job we have done in school by the evidences of sportsmanship in the everyday reactions of the children to one another? Such reactions cannot be measured on any one day or by any available test. They can be evaluated only as they are observed every day, all day, in every class, at every recess period, in every type of situation. Are the children "good sports" when they can't have their own way? Are they good sports in their treatment of less fortunate youngsters? Are they good sports in the sharing of their possessions with one another? Can the elementary school look upon its work as satisfactory unless it can say to the junior high school (or to the outside world), "Here is a group of children who are good sports in life situations"?

Are appropriate social habits being formed?—One of the things which life demands most heavily of each of us is a set of desirable social habits. When we look at children as they are leaving the sixth grade, and try to summarize what we have done for them, we must consider the kinds of social habits which the school has helped them to acquire. Have we so conducted our school that the only social habits the child has acquired are those of trying to "put something across" on the teacher, cheating in order to get the required marks in class, or bullying other children in order to get more attention? Have we had a curriculum which was so unsuited to the child's needs and abilities that he has become antagonistic toward authority and toward children who are more successful than he? Has our system of promotion and retardation prevented him from acquiring the approved social habits of his own age group? How can a boy or girl acquire habits of friendliness, good manners, trustworthiness, self-control, poise, leadership, followership, and the like, if he is never given an opportunity to give and take with children of similar maturity and social interests? Can a fifteen-year-old boy grow in friendliness if he has only ten-year-olds with whom to make friends? Can an adolescent girl acquire appropriate manners if she is always associated with younger children? How can a child acquire the ability to lead or to follow if he is kept in a group which does not inspire his loyalty? When we evaluate our schools, let us consider this field of social habits. Let us bear in mind that long after laboriously acquired facts have disappeared from the memory, a certain "way of living" will continue to be the most essential thing in the life of the individual.

The best way to evaluate character is to observe children both at work and at play. Little confidence can be placed in the tests of character which ask what ought to be done in a given situation. Any child

will *say* that one ought not to steal; the point is, will he *refrain* from stealing? Any child will say that one ought to tell the truth, but does he do it? Any child will say that one should not cheat, but does he always abide by the rules? Schools can help build character; they can also help destroy character. Difficult tho it is to measure results in this field, we must evaluate our teaching partly in terms of its influence upon social habits and ideals.

Are suitable life interests being aroused?—In adult life we spend our time partly at our vocations, and partly in ways which are recreational. On the elementary-school level, of course, little is done to provide vocational training. Most children of pre-adolescent age are not sufficiently mature to select the line of work at which they will later earn a living. For this reason, nothing which the grade school does should be appraised in terms of its vocational value. Naturally, certain skills and abilities acquired in the elementary school are fundamental in many vocations, but they are equally important in other phases of life.

In the recreational field also, children of this age are too young to pick out any single type of activity as a permanent hobby or interest. They are, on the other hand, filled with curiosity about many different things. There is a great deal about them which is new and unexplained, and they should be encouraged to explore this unfamiliar territory. They should dabble here and taste there; open this door and open that one. They should be so full of the zest of living and learning that they do not have the time or opportunity to settle to one thing only. We must evaluate in this field by the breadth of interest and the degree of curiosity among children. If we have not stimulated interest and activity in many different areas, we have to that extent failed.

Is good taste being cultivated?—How shall we evaluate our efforts to develop good taste in children? Appraisal in this field is very difficult indeed. Elementary-school pupils are, for the most part, too young to buy many things for themselves. Their clothing is usually selected for them. Their homes are usually arranged by the adult members of the family. However, we must discover, so far as possible, what kinds of things the children choose when they have the opportunity. What pictures do they select when permitted to make a choice? What programs do they tune in on the radio? What stories give them the greatest pleasure? What combinations of colors do they prefer in their dress? How do they decorate the schoolroom if they are allowed to decorate it unmolested? How do they plan party decorations if they do it all themselves? Have we taught cultural subjects in such a way that they actually make a difference in children's tastes, or have we merely taught a few facts and rules which are not applied in practise? If we cannot answer these questions, our appraisal is incomplete.

Are well-balanced personalities being developed?—Finally, let us try to appraise the total personality of the child. Only by doing this can we tell whether the school program has been well balanced or lopsided. We may examine separately the abilities, skills, and attitudes of children in the same way that we may analyze a room, considering first its rug, then its curtains, and so on. However, the curtains are not of much value without the rug, and the value of the rug depends upon the rest of the furniture. The piecemeal analysis of a child is just as inadequate as the piecemeal analysis of a room.

Even more unfortunate, perhaps, is our custom of giving examinations at the end of the semester on only a few very limited phases of learning, and then using the results to determine whether or not the child is to be promoted. When we give a child a slip of paper indicating where he is to work during the following year, that report should be based on an appraisal of more than two or three isolated parts of his personality. The child should be considered in the light of his attitudes, social habits, interests, and tastes, as well as his academic skills and abilities. Only when all of these elements have been considered, separately and as an integrated whole, can the child be placed where he will profit most from the next semester's work. Only then, moreover, can appraisal of the school program be considered reasonably complete.

NOT ONLY must test technicians help in the processes of test construction, but experienced and interested classroom teachers must cooperate also. Suggestions as to what objectives are of most value, how the attainment of these objectives can be judged, and how practical are the ideas of test experts for measuring such attainment in the classroom, must evidently come from teachers and principals.

One way in which the staff of an elementary school can aid in the development of new tests is to go thru the list of purposes or objectives of the school, and indicate after each objective any methods which it thinks practicable for obtaining evidence of the degree to which this purpose is being realized.—Wrightstone, J. W., p. 494-95 of this yearbook.

TECHNICS APPLICABLE TO THE APPRAISAL OF SCHOOL PRACTISES

HARRY P. SMITH

Professor of Education, Syracuse University, and Director of Research, Syracuse Public Schools, Syracuse, New York

APPRAISAL of any school practise is inevitable. Such appraisal may be based on the subjective opinion of the school practitioner himself. If he is an innovator, his appraisal may be biased in favor of the practise he has inaugurated. His reasons for favoring the practise are often the result of pure rationalization. This type of appraisal has characterized many activities in the past, and is all too frequent today. Parallel with it is the equally subjective method of the practitioner who holds to the old procedure because he is accustomed to it. Such a worker becomes conscious of an innovation, but because of his inability to understand the new practise or because of pure lethargy, he builds up arguments against the new in favor of the old. This again may be merely a defense mechanism or rationalization.

While these practitioners are busy with their appraisals, we become conscious of a third group who feel it their function to sit in judgment. The general public which supports the public schools, the patrons who send their children to public and private schools, pronounce judgment upon those who instruct the young. They, too, tend to be subjective in their approach, altho they may base their opinions on changes actually observed in their children. But frequently they are bewildered by the conflicting claims of those favorable to certain practises and those opposed. In the end, they too pass final judgment with no more data than their own general observations—judgment based upon emotional reactions rather than adequate knowledge and careful reasoning.

Until recently no other way was open to the individual who would appraise. The methods developed in the natural sciences had not been applied to the problems of education. Nor had the normative sciences developed their technics to the point where they could be used to appraise practises in learning and teaching. But with the turn of the century came a change. Students acquainted with both education and natural science began that application of scientific method which has made such a profound impression on education and which is destined to produce further marked changes in educational practise.

Controlled experimentation—From the natural science field has come the experimental method. Ideally, this method involves such control of the factors in the experimental situation that the influence of one factor can be determined separately from the influence of the other factors. In

other words, the situation is reduced to a "single variable." This is preeminently the method of the physicist and the chemist, and to some extent of the researcher in the biological sciences. The chemist wishes to know the effect of varying degrees of heat on a chemical. He determines this by controlling all other factors in the situation while he observes the effect of varying heat. The biologist wishes to determine the effect on white rats of differing quantities of food. He selects with great care two groups which are equivalent in all important respects. He then varies the amount of food given to one group while holding constant the amount given to the other, and observes what changes, if any, take place.

This method is applicable also to educational practise. A principal wishes to determine the effect of utilizing a specified system of phonics in the teaching of beginning reading in contrast to no systematic phonic teaching at all. This he can do by an experiment in which he selects two groups of children so that, with respect to learning aptitude, previously acquired skill in reading, and general social and economic status, the two groups are equivalent. Equivalence may be secured either by matching individuals in the two groups on each factor utilized in the sectioning, or by grouping so that the averages and variabilities [1] of the two groups are identical, or practically so. The same teacher should teach both groups, or the teachers should be rotated—that is, shifted at regular intervals so that each group gets the benefit of each teacher's personality for the same length of time.

At the beginning of the experimental period a series of tests are given to ascertain the initial status of each group in the skill to be measured. Then follows the period of experimentation, during which the "experimental" group receives precisely the same treatment as the "control" group except that it is given the instruction in phonics which is not given to the control group. At the end of the experimental period, tests equivalent to the initial tests are administered and any differences are noted. If, for example, the experimental group shows greater progress, and if the differences are greater than those that can be accounted for by chance errors, or errors due to an inadequate sample of children, we may conclude that the systematic work in phonics has caused the greater improvement of the experimental group. Were the findings to be reversed, we should conclude that the instruction in phonics had handicapped the experimental group.

We have here a most significant method of appraisal. When properly used it yields facts on the basis of which highly objective judgments can be rendered. It has been used in numerous instances and its possibilities are great in many aspects of education.

[1] The spread of individual cases above and below the average.

This method, however, must be applied with great care. It is much more difficult to reduce a learning situation to a single variable than to achieve similar control in the chemistry laboratory, where one deals with inanimate materials, or even in the biological laboratory, where one can keep the white rats caged from birth and can even control their ancestry. It really is possible only to approximate this type of control in a situation involving human learning. Probably the best method of overcoming the difficulty is to conduct the experiment over an area so extensive or a population so great that the large number of individuals involved will tend to equalize the groups on all factors except the experimental one. For example, the effect of kindergarten training on the child's subsequent school career has been studied by comparing the school records of many children in several cities having kindergartens with those of children in cities not having kindergartens. Similarly, the writer compared the effectiveness of the junior high school with that of the conventional seventh- and eighth-grade organization by studying all the pupils in both types of school in a large city.

A second difficulty in conducting controlled experiments is the securing of individuals who are trained in experimental technics, and who are sufficiently interested to carry out the details of these procedures. A supervisor of English in a large city recently set up an experiment in the city's largest high school to determine the effect of using certain methods for improving the reading habits of tenth-grade pupils. After the supervisor had done the initial testing and had carefully sectioned the pupils into equivalent groups, the school principal became so convinced that the experimental methods of teaching would be valuable to all pupils that he directed the teachers of both groups to use these methods. Naturally, no significant difference in the progress of the two groups was observed.

Comparison with norms—From the social sciences has come another method which is applicable to educational appraisal, namely, the normative method. This method involves collecting data from large numbers of individuals and determining from these data *norms*—that is, averages. The individuals and groups are so selected that, were the process to be repeated, the second set of norms would closely approximate the first set of norms.

The application of this method to education has resulted in the establishment of numerous norms—norms of achievement in subjectmatter, norms on learning-aptitude tests, norms on performance tests, grade norms, chronological-age norms, mental-age norms, percentile norms, and so on. Once such norms are established, the status or performance of children in individual schools and classrooms can be appraised by comparison with them.

This method is probably more familiar to most educators than the experimental method. Publishers of all the newer standardized tests provide norms with which any teacher or principal may compare the achievement of his pupils or his school. School surveys have used the method widely. School administrators and supervisors frequently publish reports showing comparisons of their local averages with the wider norms.

It is necessary, however, to observe certain precautions in using this method for appraisal purposes. The measuring instruments used, such as tests and scales, must be both valid and reliable; that is, they must measure what they purport to measure and they must do it consistently. An achievement test in arithmetic must measure arithmetic achievement and not some other skill or aptitude. A valid measure of school achievement in literature must measure *school achievement* in literature, and not the knowledge of literature which the child has acquired as a result of living in a superior cultural environment where he is surrounded by good literature. Some literature tests measure the latter rather than the former. Likewise, a language-usage test may be a test of the influence of the child's whole cultural environment upon his language habits, rather than a test of school achievement in language usage. Such tests lack validity for purposes of school appraisal. On the other hand, tests which permit latitude in the scoring of responses lack reliability. Only those tests which are both valid and reliable should be used in evaluating school procedures.

In using norms for appraisal purposes, it is necessary to keep in mind that a given set of norms is valid only for comparable groups. The general norms of a test are usually based on a large sampling of the school population. If, in the use of such norms for comparative purposes, variation is found in the average achievement of different school buildings within the same city, it may be advisable to inquire whether the groups are comparable. In a single small city a mean difference of one year in mental age, grade for grade, has been discovered between the pupils in one section of the city and those in a more favored section. Obviously any comparison of school achievement must take account of so large a difference in maturity. Variations in socio-economic status may also have a bearing on comparisons which are based on certain types of tests.

The case-study technic—From medical practitioners and professional social workers we have a third method which may be used for appraisal —the case-study method. This method involves securing all pertinent data about an individual and his environment, and then making comparisons and inferences. The difference between the normative method and the case-study method is that the former utilizes a single norm

obtained by compiling a *single set of facts* from a large population. The latter method uses *all pertinent data* concerning each individual studied.

The case-study method has not been used as extensively in education as has the normative method, but its value in medicine and in social case-work argues for its more extended use in school appraisal. A beginning has been made in the extensive diagnosis of children who are deficient in reading. Such diagnosis has resulted in the application of remedial measures to these cases with frequent marked improvement. There is no reason to believe that equally valuable results may not be secured thru the case-study technic in every field represented in the elementary school.

Generalizations are also possible thru the application of this method. For example, a certain experiment is concerned with the merits of six different methods of improving the reading abilities of university students. Only a limited number of students is involved in each method, but the experimenter is making a careful analysis of each individual, involving all traits and factors that may be pertinent to the problem in any way. On the basis of the complete pictures thus secured and the differences noted over a period of many months, certain inferences and conclusions will be drawn. This, of course, has been the method of the medical practitioner for a long time, and who would say that great progress in medicine has not resulted?

In the case of maladjusted pupils we already make wide use of this method. The psychologist, the psychiatrist, the visiting teacher, and all others concerned with the child's school performance contribute to the picture of his personality as a whole. On the basis of this composite picture, remedial measures are planned in the hope that a satisfactory adjustment will be achieved.

In school appraisal a wider use of the case-study method is desirable. In many instances, comparisons with norms are appropriate only after an extensive investigation of all contributing factors. The inter-community comparisons in the statewide survey being conducted by the Regents of the University of the State of New York make use of this procedure on a large scale. That is, an attempt is being made to construct a complete picture of each community studied, and on that basis to make comparisons with other communities and with general norms.

Conclusion—This article has reviewed briefly three general methods of appraisal which are applicable to education—the experimental, the normative, and the case-study technics.[2] Until these methods had been developed, school appraisal was based almost wholly on uncontrolled observation and subjective opinion. In many communities it still rests

[2] For further critical discussion of these and other technics of appraisal, see Chapter X.

on such a basis. In others the schools are increasingly making use of the newer, more systematic, and more objective technics. These newer methods need still further improvement and adaptation to meet the requirements of school situations. Above all, they need to be applied and interpreted by workers who are sympathetic toward them and thoroly familiar with the technical problems involved.

WHILE OBJECTIVITY is an important goal of measurement in education, it is still far from being attained to the same degree by every type of measuring instrument. Yet even the most subjective type cannot be thrown aside as useless. The materials with which educators work are such that the technics which have been successful in the physical sciences cannot be applied to educational problems without careful adaptation, and generally this adaptation is in the direction of subjectivity. Many elements in the school are so highly individual in character that they cannot be standardized; in fact, it would be undesirable to have them conform to a standard pattern. Teachers, pupils, classrooms, and even entire school systems have certain distinctive qualities and potentialities which cannot be radically changed or ignored in the process of evaluation.—Chapter X, p. 570-71 of this yearbook.

CHAPTER II

APPRAISING THE SCHOOL ORGANIZATION

EDITORIAL COMMENT

THE ORGANIZATION of a school is not easy to appraise in objective terms. It is true that standardized tests can be given in schools having different types of organization, and the results compared. It is difficult, however, to set up such an experiment so that the results may be attributed to differences in school organization alone rather than to a combination of influences. Differences in the abilities of pupils, in the qualifications of teachers, in the methods of instruction, and in the character of school buildings and equipment are almost sure to affect the outcomes unless great care is taken to equate the schools with respect to these factors.

While the results of tests and other measures of pupil development may provide some indication of the effectiveness of a school organization, it seems necessary to rely heavily upon more subjective procedures. Perhaps the most satisfactory approach is to (1) study the forms of organization which are in use or have been used in the past; (2) set up criteria based upon accepted educational objectives and upon competent opinion as to the probable contributions of various elements of organization to the attainment of these objectives; and (3) judge carefully the extent to which the local organization meets the criteria set up. Specially constructed checklists, score-cards, or other instruments of controlled observation will be helpful in making such judgments.

This chapter approaches the appraisal of school organization in several ways. In the first article, Coxe discusses basic considerations relative to four phases of organization. The next two contributions are concerned with the traditional plan of grading and promotion. Dolch shows how a small school unit examined its graded system by comparing the distributions of test scores made in successive grades. Farley reviews several studies showing the effects of premature instruction, of school failure, and of retardation upon pupil achievement and personality.

The fourth and fifth articles illustrate experimental procedures. Stuart describes an experiment in which one school used a modified departmental organization while another used the one-teacher-per-grade organization. Yunker reports a similar study comparing schools of the platoon and traditional types. The closing article, by Painter, presents seven criteria for judging plans of grouping pupils within a grade.

For additional material on the appraisal of school organization, the reader should consult the list of references on page 290.—*Editorial Committee.*

BASIC CONSIDERATIONS IN APPRAISING A SCHOOL ORGANIZATION

WARREN W. COXE

Director, Educational Research Division, New York State Education Department, Albany, New York

THE ORGANIZATION of an elementary school may be appraised with reference to its effect on (1) educational costs, (2) convenience or ease of administration, and (3) pupil development. The following discussion is limited to school organization as it affects the development of pupils.

Broadly defined, the term "pupil development" includes not only those academic learnings which take place thru contact with books or teachers, but also the growth of personality and character traits, attitudes, and appreciations which depend upon the whole social and cultural situation in which the pupil is placed. However, since individual schools and communities differ with respect to the educational objectives sought, the writer believes that there is no single *best* type of organization for all schools. Any particular organization must be judged by its appropriateness to the task of education as locally conceived, and to the community conditions under which this task is carried on.

There are four phases of school organization which relate especially to pupil development: (1) administrative organization, (2) pupil organization, (3) instructional organization, and (4) records and reports. Let us consider how each phase may be appraised in terms of its consistency with our theories of pupil development, and in terms of its consistency with each of the other phases.

ADMINISTRATIVE ORGANIZATION

Administrative organization includes the size, qualifications, and relationships of the school staff. Excluding budgetary limitations, administrative organization will be controlled largely by the number of pupils enrolled in the school and by the educational objectives of the staff and of the community.

Length of elementary-school period—One of the first questions to be raised is: What should be the length of the elementary-school period? Shall it begin with the first grade, the kindergarten, or the nursery school? Shall it continue thru the sixth, seventh, eighth, or ninth grade? The answer will be determined by the answers given to other questions, such as: Should elementary education be pre-adolescent in character or should it include the early adolescent years? Should we expect all pupils completing the elementary school to have reached a certain minimum

achievement, or should we aim to develop each pupil's abilities to the fullest extent and expect a varied product? If the former is expected, we must determine how many years it will take to attain the desired standard of achievement.

Whether or not the kindergarten and the nursery school are to be a part of the elementary school will depend again upon the objectives of the particular school. If subjectmatter attainment, such as facility in using basic tools, is the primary objective, there is little reason for considering the kindergarten or nursery school as parts of the elementary-school organization. If, however, our objectives include all phases of pupil development, these newer units naturally belong in the elementary school.

Question of special classes—Another question of administrative organization is whether the school should provide special classes for those children who deviate so much from the average that they cannot be given adequate care in the regular organization. Adequate provision for such deviates is dependent upon several factors: (1) the number of them in the community, (2) the adequacy of the regular school offering, (3) the amount of variability in the pupil group, and (4) the school's philosophy of caring for individual pupil needs. Where the offering of the regular organization is inadequate, there is apparently an excessive demand for special classes; where this organization meets the needs of a fairly wide range of pupils satisfactorily, the demand for special classes is reduced. In an appraisal of administrative organization, therefore, the balance between regular provision and special provision for pupil needs should be noted. While we need more information about differences among children, present indications are that such differences are too great to permit regular classes to care adequately for the needs of all.

Size and type of staff—The size and character of the school staff is an unsolved problem. A number of special services should undoubtedly be available, such as dental service, medical service, and certain types of psychological service; but to what extent there should be special personnel to care for the diagnosis of learning difficulties is not so clear. Possibly the regular teachers should be qualified to do this work. The extent to which there should be general and special supervisors also may depend upon the qualifications of the teachers. Where the regular teachers are not qualified to teach art or music, for example, there may be need for special service. In appraising this phase of administrative organization, it is necessary first to determine what services should be available, and then to determine whether they are available either thru qualified members of the regular staff or thru the services of a special staff.

In any case, but particularly where there is a large staff of specialists, the question of staff relationships becomes important. Should the teacher be given complete control of her class under the direction of a principal only, or should she carry out the program outlined by a staff of specialists? Again the answer must be determined by one's philosophy and by conditions in the particular school being studied. In general, the most important consideration is that of affording essential services, and it is a secondary matter as to how they are provided. One must realize, however, that in order to encourage creativeness in children, teachers need great freedom and responsibility in the control of their classes.

PUPIL ORGANIZATION

Pupil organization is concerned with the grouping and the movement of pupils in the school. It includes such topics as the definition of a grade, ability grouping, promotion policies, groups for remedial teaching, athletic groups, social groups, and play groups. The way in which one will appraise pupil organization will depend, as with administrative organization, upon one's philosophy of education.

Grouping for intellectual development—If one thinks of the school curriculum as an established body of subjectmatter to be taught, it follows logically that the grouping of pupils will be determined by their progress in mastering this subjectmatter. This is the philosophy which seems to have controlled our grade organization in the past. It implies that a child's progress thru the elementary school will be determined by such mastery—that individual differences will be cared for by rate of promotion. It involves a policy of double promotion and repetition of grades, or a multiple-track system depending on the child's rate of progress.

On the other hand, if one's philosophy is that instruction should be at least partially modified to meet individual pupil needs, grouping takes on a different meaning. Such a philosophy may mean the use of different subjectmatter for dull than for bright children; the presentation of the same subjectmatter at a later age for dull than for bright; or differences in the methods of presenting subjectmatter to children of different ability levels. Efforts to reduce the course of study to minimum essentials for the dull, and to enrich it for the bright are modifications of this kind. Other kinds of modification will be mentioned later.

Such modifications as have been noted cannot be applied satisfactorily if the school grade carries the traditional meaning of "a level of achievement." They are significant, however, when applied to the range of ability found at each chronological age. The recent practise

in some places of making a grade mean a chronological-age level, makes such modifications applicable to groups within grades. Such grouping should be accompanied by efforts to adapt subjectmatter content and methods of teaching to pupil needs. Under this conception, appraisal will require (1) a knowledge of the range of pupils' abilities at each chronological age, and (2) information as to the value of procedures followed to care for different levels of ability.

Grouping for emotional and social growth—The discussion of pupil organization up to this point has considered intellectual development thru the use of academic materials. There are other kinds of development for which the school must take responsibility, and which involve the use of other types of material as well as the academic. What part does pupil organization have to play in the development of appreciations, social attitudes, and other aspects of character and personality? Whereas intellectual growth can take place in isolation—that is, without contact with other pupils—the development of these other traits is largely dependent upon membership in a group. The character of the groups to which a pupil belongs does much to determine the non-intellectual traits which he develops.

Should pupils be placed in these groups by the teacher and principal, or should the pupils themselves select the groups to which they will belong? The answer is to be found thru an analysis of the nature of the groups which the school organizes. It is probable that certain qualifications are required for membership in every group. These may be intellectual or they may be non-intellectual. Admission to some groups may need to be administered by teachers and principal, while admission to others may be more effectively administered by pupils. In appraising them, one must determine not only whether the groups are varied enough to care for all phases of pupil development, but also whether admission to the groups is so administered that pupils will find themselves in those groups which will contribute most to their development.

It may be necessary to raise still other questions and to note whether the answers are in accord with the objectives the school is attempting to realize. Are pupils grouped on the basis of past accomplishment or on the basis of future need? Are pupils grouped to facilitate learning of an intellectual character, or to insure the growth of desirable personal qualities, or to provide for both kinds of development?

Promotional policies—Pupil organization must include not only the grouping of pupils, but also the ways by which they may change from one group to another, or in other words, make progress thru the school. This necessarily involves promotion policies. A school cannot consistently state that it is attempting to meet individual pupil needs and

then fail a large number of pupils. It cannot consistently aim to maintain a definite level of achievement for each grade and then have a rule that a pupil shall not stay in a grade more than two years. Plans for the progress of pupils thru the grades must be consistent with the objectives of the school and with the adopted plan of grouping pupils.

Relation to other phases of organization—As has been implied, one must settle the question as to whether pupil organization should be controlled by the subjectmatter to be taught, or whether the pupil organization should have appropriate influence on the arrangement of materials in the course of study. If the latter alternative is chosen, it becomes necessary to work out quite specifically the principles underlying the grouping of pupils. Investigators have run into difficulties in attempting to formulate a single basis for grouping pupils, such as intelligence scores. They find, for example, that such scores are not applicable to grouping for the appreciation of music and art. This difficulty suggests that there should be grouping on several different bases. How many we do not know. The kinds of grouping which are found necessary may have a definite bearing upon what is taught in the school, and are related, therefore, to instructional organization.

In a somewhat similar way, the principles which operate in organizing pupils will have to be considered in planning the administrative organization of the school. A staff must be provided and so organized as to yield the guidance and assistance necessary for each group of pupils. In fact, pupil organization under certain philosophies of education is the one in terms of which all other phases of school organization will need to be evaluated.

INSTRUCTIONAL ORGANIZATION

All matters relating to the arrangement of the materials of instruction and to the assignment of teachers to groups, grades, and subjects are included under instructional organization.

Organization of subjectmatter—Traditionally, subjectmatter has been organized by grades, specific topics being assigned for teaching in each grade. The grouping of pupils into grades on the basis of achievement, and the placement of subjectmatter in the course of study according to the difficulty of the topic, were practises which had the merit of consistency. These practises were admirably suited to carry out an educational philosophy of formal discipline, under which the same subjectmatter and the same standards of attainment were used with all pupils.

The trend in recent years has been to give fuller recognition to individual differences in mental ability and interests. This has involved various kinds of adaptation in the course of study, and has meant

that a rigid grade organization of subjectmatter is not followed. One must, therefore, raise a question as to what kind of organization of instructional material is appropriate and helpful. One approach is to study the differences in children of the same chronological age, and to place instructional materials in accordance with chronological age and in accordance with various levels of ability at each chronological age.

Another issue has to do with the arrangement of material from the several subject fields. Is the subjectmatter divided into compartments such as reading, arithmetic, spelling, history, and geography? If so, what provision is made for integrating and coordinating these separate subjects? If subjectmatter is "fused," how is it organized? Is the organization appropriate to the objectives of the school?

As indicated above, the organization of subjectmatter should be consistent with the organization of pupils. It would be inappropriate, for example, to organize subjectmatter by grades only, and then place pupils in grades according to their chronological ages, or group pupils within grades on an ability basis. It would likewise be inappropriate to group pupils by traditional grade standards, and then attempt to introduce some method of adapting instructional materials to varying pupil needs.

Assignment of teachers—Various practises are followed in assigning teachers to groups, grades, and subjects, and there is little to guide one in selecting the best procedure. Usually the teacher is assigned to teach all subjects of a grade; sometimes, to teach only certain subjects in one or more grades; sometimes to teach all ability levels; and sometimes to teach only one or two such levels. Should the teacher be assigned to a certain section or sections of a course of study, or to a group of pupils who are homogeneous with respect to their educational needs? Should the pupil come in contact with only one teacher, or should every pupil have several teachers? Should the number of teachers with whom the pupil is associated depend upon the ability of the pupil?

In part, answers to these questions will depend upon the policies of the school with respect to meeting individual differences in children. For example, the assignment of a teacher to teach history and geography to bright, average, and dull pupils in the seventh and eighth grades would be consistent with certain policies. It would indicate emphasis upon teaching an established body of subjectmatter and a tendency to disregard certain aspects of different pupil needs. It would conform to the traditional idea of a grade as a level of achievement. It might also provide for a limited amount of subject fusion. Or, instead of being assigned to teach certain subjects, a teacher might be given a certain group or groups of pupils. Within limits she might be given freedom

to select the subjectmatter to be taught. Such a situation would definitely place the emphasis upon individual pupil development; it would encourage, altho not guarantee, greater coordination of subjectmatter; and it would avoid any tendency to hold up a single standard of achievement for all pupils.

There is nothing inherent in subjectmatter to form a sound basis for instructional organization. Such organization, like the grouping of pupils, should grow out of pupil needs. If pupil organization recognizes pupil differences, instructional organization should unquestionably conform.

RECORDS AND REPORTS

The effective working of any organization requires an adequate system of records and reports. This system must be appropriate; that is, it should not include useless records or omit records which will add to the understanding and efficiency of the organization.

One of the first questions to be raised in appraising the records and reports of a school organization is whether they deal with pupil status or with pupil progress. If they deal with *status* only, they are consistent with the old traditional aim of a standardized product. If they deal with *progress,* they carry out a philosophy of differentiation to meet individual needs. If progress is the essential element of records and reports, they must be cumulative and should contain a large variety of information about the pupil, so stated that it is objective and comparable from period to period.

If the work of the school is limited to academic achievement, records and reports also may well be limited to this phase. But if the school assumes responsibility for the non-academic development of children, the records and reports must contain adequate information about these other phases.

Records and reports should also be appraised with reference to their uses. If they serve as credentials for pupils transferring to other schools, the demands of other schools must be kept in mind. If they also serve to guide the principal and teachers in placing pupils in the proper groups and in selecting and organizing subjectmatter, much information of little interest to other schools may properly be included (such as samples of pupils' work). Records should be valuable both in the placement of pupils in groups, and in the assignment of teachers to teach certain groups or subjects.

SUMMARY

This discussion has emphasized the idea that the basic consideration in appraising an elementary-school organization is that of consistency.

It has contended that there is no standard organization which may be considered best, and that what is best under certain circumstances may not be best under different conditions.

The different phases of school organization must not only be consistent with one another, but must also be appropriate to (1) the educational objectives of the school, and (2) the conditions in the local community. It is, therefore, necessary to ask to what extent each school practise is in accord with these criteria.

It is evident that the first, if not the most important, phase of school organization to be appraised is that of pupil organization. The appraisal of other phases, particularly instructional organization, must be made according to the way pupils are grouped within the school.

> ANY PLAN of school organization must embody two rather fundamental principles. These two paramount considerations are the welfare of children and administrative feasibility. In school systems in which convenience of administration has been given a place of first importance, the resulting organization has been characterized in many instances by gross inadequacies in its provision for the welfare of children. On the other hand, a school which provides in an ideal manner for the educational needs of each of the pupils enrolled therein might prove to be administratively impracticable. The problem of devising a plan of organization which will be feasible from the point of view of administration, supervision, and costs, and which at the same time will make adequate provision for the educational needs of children is not an easy one to solve.—Otto, Henry J., *Current Practices in the Organization of Elementary Schools*, Northwestern University, 1932, p. 1.

EVALUATING THE TRADITIONAL SYSTEM OF GRADING

E. W. DOLCH

Assistant Professor of Education, University of Illinois, Urbana, Illinois

IT IS CUSTOMARY to speak of the graded school as a great educational achievement. School buildings are planned to accommodate a sequence of graded groups. The curriculum is arranged in graded steps. Textbooks are purchased for the different "grades" of children. Finally, examinations are provided so that the children may "pass" from one grade to the next.

Unfortunately this system, now so universally accepted, is very much in need of evaluation. Our system of grading apples, tomatoes, and other commercial products has proved itself valuable because Grade A or Grade C has a definite meaning. In the school the question is whether Grade IV or Grade VI has any such meaning. The assumption usually made by administrators, patrons, and children is that a certain level of work is done in Grade III, work of the next higher level in Grade IV, work of a still higher level in Grade V, and so on. This assumption is one which every administrator needs to appraise in the light of cold facts. Some such facts are presented in this article.

General method of appraisal—A small school unit recently got a clearer view of its graded system by the simple method of giving the same achievement test to the pupils in Grades III, IV, V, and VI. In facing the results, administrators and teachers did not look at medians or arithmetic averages alone. Of course, successive grades showed successively higher median scores because in each successive grade the children were a year older, on the average. A year's increase in maturity and experience will produce a higher average achievement for the group in almost any field of work. Instead of considering only averages, therefore, the workers in this system also examined the detailed distributions of test scores. Perhaps the most arresting distribution was that of scores in arithmetic computation, as given in Table 1.

Overlapping of grades in arithmetic achievement—Table 1 shows the accomplishment of more than 1200 pupils sitting in rooms labeled Grades III to VI. Arithmetic computation is something which is usually learned in school, if at all. The best computers should therefore have been in Grade VI, and the poorest in Grade III. To reveal the true situation, horizontal lines have been drawn separating the total number of children into four approximately equal groups, the upper group being the best in computation, the second group the

next best, the third group still lower, and the fourth group the poorest. Now, if the grade system had been working as it was supposed to work, all members of the highest group in computation would have been in Grade VI. But the table shows that one-fourth of this group were in Grade V. By the same reasoning, the next achievement group should have been found in Grade V, but these children were really sitting in the rooms of three different grades, IV, V, and VI. The third achievement group, instead of being in Grade IV, was scattered in Grades III, IV, V, and VI. The poorest group also was spread over four grades. Apparently the plan of having four different "levels" of work for the different grades does not correspond to the situation existing in this school system.

TABLE 1—GRADE LOCATION OF FOUR ACHIEVEMENT GROUPS IN ARITHMETIC COMPUTATION

SCORES ON STANDARD TEST	NUMBER OF CHILDREN MAKING SCORES IN EACH GRADE			
	III	IV	V	VI
(1)	(2)	(3)	(4)	(5)
110–14	..	..	..	8
105–09	..	..	4	22
100–04	..	..	1	45
95–99	..	..	11	58
90–94	..	..	25	54
85–89	..	..	39	48
80–84	..	..	35	24
75–79	..	1	51	21
70–74	..	8	75	16
65–69	..	44	28	9
60–64	14	145	44	6
55–59	64	44	9	2
50–54	36	15	6	3
45–49	74	26	2	1
40–44	61	22	..	1
35–39	40	3	2	..
30–34	18	..	..	..
25–29	7	..	..	..
20–24	3	..	..	..
15–19	3	..	..	..
5– 9	1	..	..	..
Total number	321	308	332	318

Read table: Eight pupils in Grade VI made scores of 110 to 114 on a standard test in arithmetic computation; 4 children in Grade V and 22 in Grade VI made scores of 105 to 109; 1 child in Grade V and 45 in Grade VI made scores of 100 to 104; etc.

Overlapping in reading ability—To change to a quite different field, let us consider the grade situation in reading. Table 2 shows the distribution of scores made by the four different grades on the same reading test. Again horizontal lines have been drawn to divide the total number of pupils into four groups of approximately the same size, ranging from best to poorest.

TABLE 2—GRADE LOCATION OF FOUR ACHIEVEMENT GROUPS IN PARAGRAPH READING

SCORES ON STANDARD TEST	NUMBER OF CHILDREN MAKING SCORES IN EACH GRADE			
	III	IV	V	VI
(1)	(2)	(3)	(4)	(5)
115–20	..	..	..	1
110–14	..	..	..	7
105–09	..	..	4	16
100–04	..	3	4	28
95–99	..	2	20	36
90–94	..	4	16	31
85–89	..	19	31	52
80–84	3	18	47	49
75–79	2	24	34	25
70–74	4	37	47	32
65–69	21	61	48	21
60–64	57	42	32	15
55–59	28	32	16	3
50–54	35	26	10	3
45–49	55	20	7	4
40–44	41	6	6	3
35–39	36	7	4	..
30–34	11	3	1	..
25–29	19	2	1	..
20–24	6	2	..	..
15–19	7	..	..	..
10–14	4	2	..	..
Total number	329	310	328	326

Read table: One pupil in Grade VI made a score between 115 and 120 on a test of paragraph reading; 7 pupils in Grade VI made scores of 110 to 114; 4 pupils in Grade V and 16 in Grade VI made scores of 105 to 109; etc.

Because reading ability is the result of many more factors than is skill in arithmetic computation, we find here a still wider spread in the different achievement groups. The best one-fourth of the readers were spread over three different grades. Each of the other achievement groups was spread over four grades. Surely a system of stepping-up

for each successive grade the difficulty of textbooks, the amount of reading required, and the requirements for "passing" does not fit the situation as these scores present it.

Misleading character of "average" scores—This method of appraising our graded system is not new. Years ago, in the first enthusiasm of the testing movement, it was suggested by Haggerty [1] and others. It has been forgotten, apparently, or crowded out of the picture by the widespread practise of judging group achievement in terms of medians or averages. Yet educational statisticians have warned us repeatedly against permitting averages to conceal important facts. The very notion of the "average" of a group suggests that most members of the group are like the average. We know, however, that the chief characteristic of an unselected group of children is a tremendous diversity of ability and accomplishment. Therefore, to use only an average score in measuring the work of a roomful of children is almost sure to lead to false thinking about them and to unsound planning for them. Under the traditional graded system our plan of instruction is primarily based upon averages. This kind of thinking and planning needs to be checked or appraised in individual schools by the sort of figures given above.

Conclusion—It is not within the scope of this brief article to say what should be done when wide variations in ability or accomplishment are found in a single classroom, or when great overlapping exists among the pupils of different grades. The appropriate solution will depend in part upon the school's educational philosophy, local traditions, quality of teaching staff, type of supervision available, and many other factors.

It is clear, however, that the traditional system of grading is inadequate to care for these enormous differences among pupils. The children in a typical grade group cannot be educated satisfactorily when all are required to use the same textbooks, to submit to the same methods of teaching, to complete the same work in the same period of time, and to pass the same examinations in order to be promoted. Under such a system, those who cannot meet the standards of their grade must undergo the discouraging experience of repeating work in the company of younger and brighter children. Those whose achievement is well above the grade average must either suffer from a lack of sufficient work to keep them busy and interested, or be pushed ahead to grades in which they find it difficult to make happy social and emotional adjustments.

[1] Haggerty, M. E. *Educational Achievement*. Ithaca, N. Y.: Joint Committee on Rural Schools, 1922. 223 p.

Obviously, these conditions do not provide a suitable educational opportunity for every child. Some kind of remedy is possible in every school system, but no remedy is likely to be attempted unless administrators, teachers, and parents understand the problem clearly as it exists in their own schools.

INCREASINGLY, the problem of pupil classification must be attacked through carefully planned experimentation. Too frequently in the past new techniques and practices have been advocated, propagandized, and adopted without adequate trial of their efficacy. New schemes have been adopted and have been followed until they become old schemes without any effort to prove their worthwhileness. If satisfactory solutions of classification practices are to be established on sound foundations, changes in current practices should be looked upon as experimental and accepted as standard only after searching tests have demonstrated their worth.—Engelhardt, Fred, in *The Grouping of Pupils*, Thirty-fifth Yearbook, Part I, National Society for the Study of Education, 1936, Chapter 2, p. 29. (Quoted by permission of the Society.)

THE INFLUENCE OF GRADING AND PROMOTIONAL POLICIES UPON PUPIL DEVELOPMENT

EUGENE S. FARLEY [1]

Director, Bucknell University Junior College, Wilkes-Barre, Pennsylvania

THE GRADING SYSTEM of the American public school has contributed much to the development of our educational program. It was an outgrowth of the monitorial system, and was intended to correct the weaknesses of that system and at the same time to retain the economies of group instruction. It served these purposes, and thus made possible the phenomenal development of the American school during the past century. However, altho we are indebted to the graded system for significant progress in the past, we must take care not to retain the system after it has outlived its usefulness. This article reviews several methods of studying the system, and indicates such conclusions as the writer believes to be valid.

Variations in achievement within a grade—The graded system attempts to bring together children of approximately the same achievements in each grade. For generations it was assumed that by a process of retardation, promotion, and elimination, a high degree of uniformity could be attained. To the uncritical observer there was a semblance of uniformity, but objective studies have clearly demonstrated the great differences existing within each class and each grade.[2] These studies have not only shown the impossibility of securing uniformity of pupil achievement in several subjects, but they have demonstrated pretty conclusively that with a large group of pupils it is impossible to maintain such uniformity in any single subject. The writer personally has never found within any of the intermediate grades a range of less than four years in the achievement of students in any subject. In most grades the differences are considerably more extreme.

The difficulty of attaining uniform achievement within a grade was driven home forcibly several years ago in a large city school. The principal of this school had worked for over twenty years to secure the proper grade placement of his pupils. Reading had been his particular interest, and he was quite convinced that thru judicious

[1] Formerly Director of Research, Public Schools, Newark, New Jersey.

[2] See: Van Wagenen, M. J. "Grade Placement versus Mental Age as a Factor in School Achievement." *Nature and Nurture.* Twenty-Seventh Yearbook, Part II, National Society for the Study of Education. Bloomington, Ill.; Public School Publishing Co., 1928. Chapter 6, p. 113-19. ¶ Skinner, Charles E., and others (editors). *Readings in Psychology.* New York: Farrar and Rinehart, 1935. p. 383-86.

School surveys and routine test reports of teachers and school research departments present the most convincing data on individual differences within classes or grades. See also the article by Dolch in this chapter.

retardation and promotion he had attained a considerable degree of homogeneity in reading ability within his grammar grades. To check his convictions he requested a survey of reading achievement in all grades. When the reading tests were given, an amazing discrepancy was revealed. No grade above the third had a range of less than five years in reading age, and in the eighth grade the scores ranged from third-grade to twelfth-grade norms. This was the homogeneity in reading ability attained by a careful policy of grading pupils. All pupils in each grade had been expected to read the same books and to profit from the same instruction. This expectation was entirely unreasonable, as the children had little in common so far as reading ability and instructional needs were concerned. The most casual observation of the test results indicated that uniform instruction was impracticable. Some pupils needed instruction in the mechanics of reading, whereas others needed freedom and encouragement to read widely in fields of special interest. Even a careful policy of promotion and retention had failed to eliminate these differences.

Futility of premature instruction—Under the rigid grade system, maladjustment often commences when the child enters the first grade. At this point a few children can already read, and some are ready to begin reading, but a great number are not yet sufficiently mature to profit from instruction in this subject. The progressive school recognizes this fact and so modifies its program that formal instruction will begin at different times for different children. The school that endeavors to maintain rigid grade standards ignores these differences, and endeavors to teach all first-grade children to read at the same time. Under this plan the more able children are compelled to retard their progress so that they may stay with the remainder of the class, while the slow pupils are forced to grapple with ideas that are beyond their mental depth. For the latter group a period of floundering ensues, during which bad habits and attitudes are very likely to develop.

Washburne[3] has reported that reading instruction is more effective if it is delayed until the child has attained a mental age of six years and six months; yet each year there are hundreds of thousands of children whose formal instruction in reading begins long before they attain this mental maturity. This practise of premature instruction is clung to tenaciously, and is justified by many as the only fair method of providing equal educational opportunities for all children. Such an attitude on the part of many teachers led to a study of reading achievement in relation to mental age in the schools of

[3] Morphett, Mabel V., and Washburne, Carleton. "When Should Children Begin to Read?" *Elementary School Journal* 31: 496-503; March 1931.

Newark, New Jersey, during 1934. At the end of two years of instruction all children in the experiment were given mental and reading tests. The data for approximately 5000 children showed that in general they had not learned to read unless they had attained a mental age of at least six years and six months. Over 95 percent of those with mental ages below this level had not learned to read independently in spite of two years of instruction. The close relationship found between mental age and reading ability confirmed the results reported by Washburne and reemphasized the futility of premature instruction.

Effect of failure upon attitudes and habits—In the past we have assumed that grade failure was of no serious consequence to the child, and have justified it as a means of maintaining our school organization. Recently, however, numerous studies have shown that such failure is associated with many undesirable qualities in children.[4] In some instances these qualities have apparently been responsible for the scholastic failure, but there is also reason to believe that repeated failure encourages the development of bad attitudes, and ultimately contributes to a breakdown of personality and character.

During the child's early years in school we want him to develop good attitudes toward this institution so that we may work constructively with him for the rest of his school life. But how can good attitudes toward the school result from the compulsion that a rigid program places upon the child? We force the child to undertake something that is impossible for him, and then we brand him as a failure on his report card and in the eyes of his fellows because he does not achieve the impossible. This experience of failure is repeated again and again until a sense of futility and hopelessness creeps into the child's consciousness. If he is docile he will bear the ordeal as best he can; if he has more spirit he will revolt, and problems of discipline and truancy will increase. Such a revolt is a wholesome sign. It indicates that the child possesses a spark that is worth guiding and developing.

Good habits also should be developed during the early school years. The child should learn the easiest way to do a thing. He should develop skills in reading and language that will provide a foundation for future development. Good habits, however, result from many successful performances; they cannot be developed by the repetition of poor performances. In the development of habits, as in attitudes and ideals, we build toward greater achievements upon the small accom-

[4] See: Farley, Eugene; Frey, Albin J.; and Garland, Gertrude. "Factors Related to the Grade Progress of Pupils." *Elementary School Journal* 34: 186-93; November 1933. ¶ McElwee, Edna W. "A Study of Truants and Retardation." *Journal of Juvenile Research* 15: 209-14; July 1931. ¶ A study made by W. Walker Cheyney and Philip A. Boyer and reported in mimeographed form. Extracts quoted in *Elementary School Journal* 33: 647-51; May 1933.

plishments that are behind us. If the child's basic habits are poor, we have nothing to build upon but a shifting bog, and all future attempts will be futile unless a new foundation of successful performance is constructed.

The case of Dorothy—The importance of a good beginning in school is well illustrated by an individual case. Dorothy entered the first grade before she had attained the mental maturity essential to success in reading. Her teacher commenced work in formal reading immediately, and for a month or two Dorothy was delighted. She thought she was learning to read. She was encouraged to use the books in the classroom library. Gradually, however, a change became apparent in Dorothy's attitude. She lost interest in school work. At home she no longer spoke of reading, and she wanted to stay at home whenever possible. This concerned her parents, but it was not until she had been in school for two years that the cause of this changed attitude was discovered. At that time all children in the school were tested in reading, and it was found that Dorothy, with over half of her class, was unable to read satisfactorily. The situation naturally caused some concern, for they were all normal children from good homes, and after two years of instruction should have been reading fluently.

All of the deficient children were placed in the care of a special teacher, and were given some remedial work. For six weeks no real progress was made. The children were apathetic and listless. They had no interest in reading. During these weeks, however, the teacher discovered their difficulties. All of them had inadequate sight vocabularies. They knew nothing of phonics, and had never been taught to get the meaning of new words from the context of the sentence. They read without comprehension, word by word, and when they met a new word they guessed at it without rhyme or reason. This floundering had gone on for two years. The habits these children had developed were wrong, and before new habits could be developed the old had to be broken down. Once this was understood, the remedial teacher dropped all reference to reading for a week. She did, however, read to them daily in order to arouse their interest, and each day new and fascinating books appeared on the library table. Gradually the children showed some interest in these books, and then the work began. The teacher started at the very beginning in order to develop the right habits. Slowly at first, but with ever increasing rapidity the children developed. At the end of the year their reading ages were equal to their mental ages, on the average, and further improvement seemed assured. A bog of bad habits had, for a time, threatened the success of their school work. Now, three years later, Dorothy and her classmates read widely and are vitally interested in their school work.

Effect of retardation on pupil personality—Attempts to maintain the graded system by means of retardation arise from an overemphasis on scholastic work, and from a failure to give proper consideration to other phases of pupil development. This practise defeats its own ends. Discouragement is bred and achievement is lowered. Evidence that this is true has been secured from a series of studies during the past seven years.

In 1931 and 1932, studies were made in two city schools to discover what factors were associated with grade failure.[5] As expected, low scholastic aptitude was found to be the most prominent factor. Further analysis revealed, however, that children of low I. Q. who had repeated several grades were not doing as well in their work as were children of the same ability who had been kept in grades with children of approximately their own age. Apparently the natural weakness of the repeaters had been aggravated by maladjustments in the classroom.

Poor ratings in character were also common for children who were retarded in grade placement, and there was a slight tendency for the poor ratings to increase with the amount of retardation. It can be contended, of course, that weak character was the cause of grade failure, and in some cases this was undoubtedly true. There were other cases, however, in which the child's character had been weakened by constant maladjustment and failure. Such cases merit our serious consideration, for they indicate a failure on the part of the school to meet all of the obligations imposed by compulsory-attendance laws. If we force all children to attend school we must provide a program that is suitable for all.

In a special phase of the study dealing with twelve-year-old pupils, disciplinary problems were found to be associated with retardation. Twelve-year-old pupils who had advanced at a normal or accelerated pace seldom caused disciplinary problems. Those who were retarded, on the contrary, caused frequent disturbances. This was possibly due to inward revolt against a situation in which failure was inevitable. It was also found that the truant was generally the dull or slow boy who had failed one or more times to gain promotion. Of approximately 500 truants, 93 percent were retarded, and in most cases the cause of failure was a lack of scholastic ability. The work expected of them was beyond their capacities, and they had suffered the debilitating effects of repeated failure because the school did not provide a program that was adaptable to their needs.

[5] Farley, Eugene; Frey, Albin J.; and Garland, Gertrude, *op. cit.*, p. 186-93.

The writer does not believe that truancy is inherently evil. It is really an attempt on the part of a child to escape from a situation which is uncongenial and probably harmful to him. The associations that a boy develops while he is truant, and the constant necessity of avoiding school and police authorities, all too frequently lead to serious complications that affect his entire life. It is known that juvenile delinquency is frequently preceded by truancy, which in turn is preceded by maladjustment in the school. Altho other factors than school maladjustment obviously contribute to juvenile delinquency, the relationship that exists between delinquency and school failure makes imperative a greater recognition of this problem in the school.

Effect of retardation on academic achievement—If maladjustment and grade failure create problems of discipline and truancy, it is reasonable to anticipate that they will likewise have an unfortunate effect upon scholastic achievement. This simple assumption is supported by objective data. In one study [6] approximately 400 children in Grades II thru V were paired on the basis of achievement, I. Q., and mental age; one of each pair was then promoted and the other retarded. Gains in achievement made by the two groups during one term showed that no real advantage resulted from the policy of retardation. In no grade was there any great difference in the gains of retarded and promoted pupils. While the data were somewhat conflicting, they definitely indicated that retardation for one term had not been a particularly effective means of adapting the work to pupil needs, or of stimulating individual effort.

A single failure would not, however, be expected to completely discourage the typical child. Most of us are sufficiently resilient to recover from one failure, but not many of us have sufficient recuperative powers to recover from constant failure. To check the effect of repeated failure upon scholastic achievement, data concerning the mental maturity, grade progress, and achievement of more than 3000 fifth- and sixth-grade children were studied. Appropriate statistical analysis revealed that the children who had been retarded in their grade progress were not doing school work that was commensurate with their mental abilities. This result indicates that instead of improving the scholastic work of pupils, retardation affects achievement adversely. If this situation prevails in other school systems, it seems essential that the traditional system of grading and promotion be modified or abandoned. We are not justified in continuing a practise that creates maladjustment and hinders child development.

[6] Farley, Eugene S. "Regarding Repeaters." *Nation's Schools* 18: 37-39; October 1936.

Conclusion—Our traditional grade organization was developed during a period when schools were responsible for little more than the three R's, and when children were not forced by legislation to remain in an environment that was uncongenial to their abilities and interests. Delayed employment and compulsory attendance laws now cause practically all children to attend school for at least eight or ten years. If during these years the pupils are seriously maladjusted scholastically and socially, their fullest development will be hindered and their personalities warped and crippled. It is tremendously important, therefore, that the schools provide a flexible and well-rounded program that will contribute to the development of good attitudes and wholesome interests, as well as satisfactory scholastic achievement. This apparently cannot be done within the rigid grade structure found in most schools.

It is often easier to criticize school practises than to propose something more worthwhile. Fortunately, ways of eliminating or modifying the graded system have already been developed, and are being tried out in many communities. Educators are becoming increasingly aware of the need for adapting instruction to individual needs, and technics for individualizing instruction within the classroom have been devised and are growing in popularity. These newer methods also need careful appraisal, but some of them at least give promise of meeting present educational needs better than do our time-honored policies of grading and promotion.

SUPERVISORY OFFICERS can perform a great service by assisting teachers and parents in clarifying policies with respect to the use of retardation and acceleration. Certainly the process of eliminating retardation is not that of elimination by fiat. It has far-reaching educational implications. The elimination of retardation will come naturally when the advancement of children is sympathetically appraised periodically, and a plan made for each child for the ensuing period based on his needs. —Mort, Paul R., in *Personality Adjustment of the Elementary-School Child,* Fifteenth Yearbook, Department of Elementary School Principals, 1936, p. 335.

EXPERIMENTING WITH A FORM OF DEPARTMENTAL ORGANIZATION—THE "COOPERATIVE GROUP"

BYRON D. STUART

Principal, Woodrow Wilson and Benjamin Franklin Schools, Westfield, New Jersey

IN THE FALL of 1931 the Benjamin Franklin School of Westfield, New Jersey, embarked upon a form of departmentalized organization, sometimes called the "cooperative group plan,"[1] in the fifth and sixth grades. For a number of years the school staff had felt the inadequacy of the traditional one-teacher plan for these grades. In undertaking a new plan, we did not want to lose the value of close and continuous relationships between the teacher and her pupils. At the same time we wanted to secure certain other advantages for both teacher and pupils which were not being obtained under the traditional plan. The organization adopted gave promise of meeting these needs, and during the past six years we have had an opportunity to appraise it in actual practise.

Nature of the new organization—In 1931 the two fifth and two sixth grades in the Benjamin Franklin School were organized into one cooperative group. With the increase of classes in these grades we organized three fifth grades into one cooperative group and three sixth grades into a second group, each group having three teachers. This arrangement has prevailed for the past four years. The school day is divided into four periods, three of which are one hour and ten minutes in length, while the fourth, a homeroom period, is forty-five minutes long. Each teacher is given responsibility for certain subjects, instead of for all the subjects of the grade. This is not an extreme form of departmentalization; yet it provides for considerable specialization of teaching in the various subjectmatter fields. At the same time, the educational philosophy underlying the cooperative group plan places the needs and interests of the child ahead of cut-and-dried subjectmatter. Hence, the usual sharp separation of subjectmatter divisions gives way to some extent to units of work, in each of which an effort is made to integrate the various kinds of subjectmatter related to it.

How subjectmatter is integrated—Under this plan each teacher contributes to the child's total development from her specialized knowledge and experience in certain fields. For example, in the fifth grade the group developed a unit of work on Colonial life. The teacher of social studies contributed material on Colonial history, correlating it with the related geographical, civic, and social background. The teacher of language and art activities helped the children to develop

[1] Hosic, James F., and others. *The Cooperative Group Plan for the Organization of Elementary Schools.* New York: Teachers College, Columbia University. 1931. 70 p.

original compositions and to reproduce stories about Colonial life. The children painted pictures, did soap sculpturing, and so forth, of the life and objects of the Colonial period. Likewise, the teacher of music taught the songs and rhythms of Colonial days. Thus the subjectmatter of several fields was integrated into a well-balanced unit, and the pupils thereby gained in understanding of the activities, forces, and problems of Colonial life.

Not only the subjects named above, but reading, writing, and spelling also receive considerable emphasis in the development of integrated units. Sometimes even physical education has a natural and logical contribution to make. However, when there are not natural reasons for including material from all required subjectmatter fields in any single unit of work, that which cannot be integrated satisfactorily is taught separately and in its natural order.

Comparing the new plan with the old—To obtain a partial appraisal of the cooperative group plan, the pupil achievement of the school using this plan was compared with that of another school under the writer's supervision which has continued to use the one-teacher-per-grade type of organization. In the following discussion the school having the traditional organization is referred to as School A, and the one using the newer arrangement as School B.

School A draws its pupils from a group of well-to-do, middle class American families. There are no colored children in the school, and no children from poor homes. The median I. Q. of this school has been slightly but consistently above that of School B during the period of comparison, with the exception of the school year 1936-37. The pupils of School A are accustomed to good English usage in their homes. Thru conversation, social contacts, and travel they have built up a wealth of information and experience which supplements the work of the school.

In School B, 88 percent of the pupils come from essentially the same type of homes as do the children in School A. Of the remaining 12 percent, about one-half are colored boys and girls, while the others belong to the foreign or poorer class of white people.

Other significant facts concerning the groups studied—Several other facts are essential to a clear understanding of this study. In the year prior to the inauguration of the new organization in School B, there were no teacher changes in the grades included in the study in either school. Furthermore, the sixth-grade teacher in the traditional school was in charge of her class for the first three full years of the study, and the two fifth-grade teachers in the same school were in their present positions during the entire period covered by the study. However, during the past three years there have been three new teachers

in the sixth grade of this school. The vacancies in this grade were due to resignation for the purpose of marriage, rather than to unsatisfactory work.

In the school which used the cooperative-group organization, there was no change of teachers for the first three years of the experiment. This parallels identically the situation in the first school. During the past three years, three changes were made in the fifth and sixth grades of this school, one of which was the addition of a teacher. Here again marriage, not unsatisfactory work, was the reason why the remaining two teachers left the school.

Another fact, which for several years was thought to be significant, was that the group of pupils in the cooperative-group organization moved into a fine new elementary-school building the first year of the study. However, two years ago the pupils representing the one-teacher-per-class organization in the study also moved into a new school building, and the change did not affect their comparative standing.

Experimental procedure and results—In May 1931, the spring preceding the organization of the cooperative group plan in School B, the sixth-grade pupils of both schools were given the *National Intelligence Tests* and the *Otis Classification Tests*. At that time both schools had the traditional set-up of one teacher per grade. The results of this preliminary testing were as follows:

School	*Median I.Q.*	*Median superiority in achievement of School A (in school months)*
A	120	6
B	116	...

These results are typical of those achieved by the two schools for a period of five years prior to the adoption of the new plan in School B. In fact, on every standardized test given between 1926 and 1931, School A made the higher average score, not only at the end of the sixth grade but generally thruout all the grades.

In the fall of 1931, the fifth and sixth grades of School B were organized into a single cooperative group. Table 1 presents the results of intelligence and achievement testing in the sixth grades of the two schools during the subsequent six-year period. The tests used for this comparison were given at the close of the sixth grade, since it was felt that if there were to be any change in the relative standings of the two groups, it would more likely become evident after a two-year period. Thus, in this study we attempted to measure the growth and progress of both groups over the two-year period covered by the new form of organization. The *National Intelligence Tests* and the *Stanford*

Achievement Test (Revised) were given from 1931 thru 1935. In 1935-36 the *Kuhlmann-Anderson Intelligence Tests* and the *Metropolitan Achievement Tests* were given. In 1936-37 the *National Intelligence Tests* and the *Stanford Achievement Test (Revised)* were used again. All tests were administered about the middle of May in each year, except the year 1937, when the tests were given late in February.

From Table 1 it is evident that the sixth grade of School B showed a gradual increase in pupil achievement as compared with the sixth grade of School A until the year 1935-36, when the difference in terms of months declined to approximately the 1933-34 level. The unusual superiority of School B in 1934-35 may have been due partly to the fact that the cooperative group in that year had a higher median intelligence than in either 1933-34 or 1935-36.

In addition to the general achievement tests mentioned above, other standardized tests in specific subjects have been administered during the period of this study, and all the results point essentially to the same conclusion. For example, let us consider the field of reading. From 1926 until 1931 the various forms of the *Gates Reading Tests* were used to measure progress in reading. During this period the pupils of School A always ranked considerably higher than those of School B. In 1933-

TABLE 1—AVERAGE INTELLIGENCE AND ACHIEVEMENT OF SIXTH-GRADE PUPILS UNDER TWO TYPES OF CLASS ORGANIZATION

YEAR	SCHOOL	MEDIAN I. Q.	MEDIAN SUPERIORITY IN ACHIEVEMENT OF SCHOOL B (IN SCHOOL MONTHS)
(1)	(2)	(3)	(4)
1931–32	A[a]	110	....
	B[b]	107	0
1932–33	A	122.5	....
	B	121	1
1933–34	A	114	....
	B	110	5
1934–35	A	118	....
	B	117.5	8
1935–36	A	112	....
	B	110	4
1936–37	A	113	....
	B	123	6

Read table: In 1931-32 the median I.Q.'s in the sixth grades of the two schools were 110 and 107, respectively, while there was no difference in their median achievement. Similarly read data for other years.

[a] In School A each grade group had one teacher only.

[b] In School B the fifth and sixth grades were combined in a single cooperative group with several teachers.

34, however, one teacher was given the definite assignment of studying the reading situation in the fifth and sixth grades of School B. She inaugurated a comprehensive program of reading instruction in these grades, utilizing the best methods available, while the corresponding grades in School A continued with their traditional programs in this field. The *Metropolitan Advanced Reading Tests* were used to check the results in both schools. These results indicated that the pupils of School B (the cooperative group) surpassed those of School A by eight school months in 1934-35, and by ten months in 1935-36.

Conclusion—From the results of our appraisal thus far, it appears that teachers who are permitted to specialize in certain areas of subjectmatter in the fifth and sixth grades are able to teach this subjectmatter more effectively. It is unwise, however, to generalize too freely on the basis of a single experiment like this one. Other school systems might obtain quite different results. Every school or school system should undertake to appraise its own policies and procedures, rather than depend upon the findings of investigators in other localities.

Another point to be kept in mind is that the achievement tests used in this experiment were limited to the ordinary subjects of the curriculum. No objective measure of the personality growth and adjustment of children was obtained. General observation, however, leads the writer to believe that the new organization sacrifices little if any of the close teacher-pupil relationship which characterizes the traditional organization. Under the new plan the homeroom teacher has her pupils for one hour and ten minutes each morning, and for three-quarters of an hour near the end of the school day. She is interested in them as individuals and helps them with their personal problems. In fact, the relationship is most intimate and wholesome, and all pupils have an opportunity to profit from contact with three different teachers instead of being confined to the influence of only one.

The children generally have expressed themselves both orally and by secret ballot as preferring the cooperative-group type of organization. When all the classes of the group were given the opportunity to express their choice without signing their names, they still unanimously preferred the new plan. They were also asked to give reasons for their answers. The replies, in their understanding of the needs and interests of children, would have done credit to a professor of education.

These conclusions have been reached and presented in a spirit of research and experimentation, and not in an attempt to prove that the cooperative-group organization will secure the same results in any other situation. It is clear that further appraisal of this plan is needed. It is possible that the results of such appraisal may vary from teacher to teacher and from school to school.

IS THE PLATOON SCHOOL PROVING ITS WORTH?

J. C. YUNKER

Principal, Harding School, Portsmouth, Ohio

CHANGE is a characteristic of all modern life, and education can be no exception. Readjustments and improvements in the schools are necessary to keep pace with the changing social scene. Old and well-established types of organization and method must yield eventually to those that are in accord with present needs. The platoon school represents an attempt to meet the present needs of children better than does the traditional school organization. Like other innovations in education, however, the platoon organization must prove its worth if it is to receive the general approval of school people and patrons.

The platoon organization was introduced in Portsmouth, Ohio, in 1930, when four new elementary schools were opened for use. These schools had been especially built to accommodate the platoon organization, and the new physical arrangements were accompanied by appropriate changes in the organization and procedure of the school staff. This article describes an attempt to appraise these newer schools by comparing their product with that of the traditional schools in the same city.

Questions raised about the platoon school—Most educators and many parents realize that the platoon schools, with their gymnasiums, playrooms, auditoriums, libraries, and other modern features, provide many worthwhile experiences for children. Nevertheless, some feel that the very presence of so many attractive features may result in a neglect of those more formal aspects of instruction which have long been considered fundamental in education. Parents have often asked the writer if he did not think there was too much "foolishness" in the platoon school. Occasionally teachers in the traditional schools have said that pupils transferring to their schools from the platoon schools were unable to do the work required. Thus, parents and teachers alike have questioned the effectiveness with which the platoon schools in Portsmouth were educating the children who entered their doors. The following are typical of the questions asked:

1. Is the platoon school producing satisfactory results in the three R's?
2. Does the child's increased interest in the newer activities result in diminished interest and effort in the fundamentals? Or does the added emotional stimulus which he receives in the auditorium, gymnasium, and library carry over and produce greater enthusiasm and effort in all his work?
3. Are the pupils in the platoon organization progressing thru school in a satisfactory manner?

Another question, seldom raised but equally appropriate, is whether the traditional organization, if thoroly renovated and furnished with the best available curriculum content, teaching methods, and teaching skill, might not be just as effective as the platoon school in attaining modern educational objectives. This question is more difficult to answer than the others, and no adequate evidence on it is presented here. A conclusive answer could be obtained only by comparing the *best possible* platoon school with the *best possible* school operating under the traditional organization.

It is possible, however, to obtain reasonably satisfactory evidence on the other questions raised above. Realizing that they are legitimate inquiries and should be answered objectively and impartially, the school administration in Portsmouth has twice undertaken to compare the results of instruction in the two types of schools. The first study was made in 1934, and the second in 1936.

The 1934 study—In 1934 the *Otis Classification Test*[1] was given to nearly 600 pupils in the twelve traditional and four platoon schools. All of these pupils had been in school since 1930, the year in which the platoon schools were first opened. The Otis test was used because of its satisfactory reliability and validity, and also because it tests general intelligence as well as achievement in practically all branches of learning in the elementary school. It was necessary to have a measure of the pupils' intelligence because of obvious differences in the types of neighborhood from which the various schools drew their pupils. Moreover, the norms for the achievement test and the mental ability test in the Otis battery are based on the same groups of children, and therefore permit comparisons that are not subject to the errors arising when tests of achievement and of mental ability are separately standardized.

From the raw scores made by the pupils on these tests, several derived scores were computed, including (1) the I.Q., or intelligence quotient; (2) the E.Q., or educational quotient; and (3) the A.R., or accomplishment ratio. The familiar I.Q., indicating the relative brightness of the pupil, is the ratio of his mental age to his chronological age. The E.Q., which measures the pupil's educational achievement in relation to the average achievement of pupils his own age, is the ratio of his educational age to his chronological age. The A.R., a measure of achievement in relation to mental ability, is the ratio of a pupil's educational age to his mental age. The normal value for each of these measures is 100.

Table 1 compares the platoon and non-platoon groups with respect to their median I.Q.'s, E.Q.'s, and A.R.'s. The comparison reveals

[1] Published by the World Book Co., Yonkers-on-Hudson, New York.

TABLE 1—MEDIAN ACHIEVEMENTS OF PUPILS IN ALL PLATOON AND ALL NON-PLATOON SCHOOLS, 1934

TYPE OF SCHOOL	NUMBER OF PUPILS INCLUDED	INTELLIGENCE QUOTIENT (I. Q.)	EDUCATIONAL QUOTIENT (E. Q.)	ACCOMPLISHMENT RATIO (A. R.)
(1)	(2)	(3)	(4)	(5)
Platoon (4 schools)....	135	98.6	96.3	99.3
Non-platoon (12 schools)...	455	88.7	88.2	99.3
Difference in median performance.....	...	9.9	8.1	0.0

Read table: The median intelligence quotient of the 135 pupils in the four platoon schools was 98.6, while that of the 455 pupils in the twelve non-platoon schools was 88.7; the difference in median I.Q.'s was 9.9 in favor of the platoon-school group. Similarly read figures for the educational quotients and accomplishment ratios in columns 4 and 5.

that the platoon group exceeded the non-platoon group by 9.9 points in median I.Q., and by 8.1 points in median E.Q., but that the median A.R.'s of the two groups were identical. The higher median E.Q. of the platoon group was undoubtedly due mainly to the superior intelligence of that group. The fact that both groups had the same median A.R. indicates that in relation to their intelligence, neither group surpassed the other in school achievement as measured by the Otis test.

TABLE 2—MEDIAN ACHIEVEMENTS OF PUPILS IN PLATOON AND NON-PLATOON SCHOOLS LOCATED IN THE SAME PARTS OF THE CITY, 1934

LOCATION AND TYPE OF SCHOOL	NUMBER OF PUPILS INCLUDED	INTELLIGENCE QUOTIENT (I. Q.)	EDUCATIONAL QUOTIENT (E. Q.)	ACCOMPLISHMENT RATIO (A. R.)
(1)	(2)	(3)	(4)	(5)
East section:				
Platoon (1 school).....	48	93.2	92.5	98.3
Non-platoon (2 schools)	72	83.0	82.5	100.5
West section:				
Platoon (1 school).....	32	87.6	88.8	102.8
Non-platoon (1 school).	31	85.1	84.4	99.6
North section:				
Platoon (1 school).....	18	114.0	116.2	99.0
Non-platoon (1 school).	40	116.0	117.0	98.5
River section:				
Platoon (1 school).....	37	96.0	96.8	100.8
Non-platoon (1 school).	64	80.0	75.6	99.7

Read table: In the east section of the city the median intelligence quotient of the platoon group was 93.2, while that of the non-platoon group was 83.0. Similarly read figures for the educational quotients and accomplishment ratios, and for the other three sections.

In view of obvious differences in the neighborhood environment and home life of different sections of the city, comparisons were made between platoon and non-platoon schools in each of four sections. The results are shown in Table 2. In three sections of the city the median E.Q.'s of the platoon groups were substantially higher than those of the non-platoon groups, while in the fourth section there was no appreciable difference. When we consider the median achievements of these groups in relation to their mental abilities, however, the superiority of the platoon groups is much less marked. Of the three sections in which the platoon groups had the higher A.R.'s, only one showed a difference as large as 3 points. In the other section the median A.R. of the non-platoon group exceeded that of the platoon group by 2.2 points. Altho these data indicate no clear margin of superiority for either type of school, they show that in general the platoon-school pupils were making at least as good progress as were the pupils in traditional schools.

The 1936 study—Two years later another comparison of the two types of schools was made on a somewhat different basis. In this study two groups of pupils were selected—one in a platoon school and the other in a traditional school—in each of the four sections of the city having both types of schools. The groups in each section were chosen so that their median I.Q.'s were approximately equal, and they were limited to pupils in the ninth month of the sixth grade who had attended either the one or the other type of school exclusively.

The pupils thus selected were brought together in the four sections of the city, and were given the *Modern School Achievement Tests*.[2] These tests were used because of their comparatively recent development, their satisfactory validity and reliability, their carefully constructed grade and age norms, and their provision for separate scores in each school subject as well as in general achievement. When the tests had been given and scored, the raw scores in each subject and on the test as a whole were expressed as grade scores indicating levels of achievement in school years and months. Educational quotients (E.Q.'s) were also computed. It was not necessary to compute A.R.'s because the groups had already been equated with respect to intelligence.

Table 3 compares the combined group of 83 platoon-school pupils with the combined group of 85 pupils in traditional schools. It shows that the median E.Q. of the platoon group exceeded that of the non-platoon group by 0.5 of a point, and that the general achievement level of the former exceeded that of the latter by one school month. The non-platoon group showed superiority in only one school subject, language usage, altho it equaled the platoon group in geography, read-

[2] Published by the Bureau of Publications, Teachers College, Columbia University.

ing speed, and spelling. In the other six subjects the platoon group surpassed the traditional group by from two to seven months. These findings support the conclusion of the earlier study that the platoon schools of Portsmouth were doing at least as well as the traditional schools in teaching children the type of material included in standardized tests.

Conclusion—Altho these studies indicate that the measurable achievement of pupils in the platoon schools was at least as high as that in the non-platoon schools, they do not show conclusively that either type of school organization is superior to the other. Several factors not taken into account in the foregoing comparisons may have affected pupil progress as much or more than the school organization itself. Among the most important of these factors are the relative abilities

TABLE 3—MEDIAN ACHIEVEMENT OF SIXTH-GRADE PUPILS IN PLATOON AND NON-PLATOON SCHOOLS, 1936

TYPES OF MEASURES	PLATOON SCHOOLS	NON-PLATOON SCHOOLS
(1)	(2)	(3)
Number of pupils	83	85
Median I. Q.	100.9	101.0
Median E. Q.	103.3	102.8
Median grade scores (in school years and months):		
General achievement	6.7	6.6
Reading comprehension	7.8	7.3
Reading speed	7.0	7.0
Arithmetic computation	7.0	6.3
Arithmetic reasoning	6.5	6.3
Spelling	6.7	6.7
Health knowledge	6.6	6.3
Language usage	6.3	6.5
History and civics	6.4	6.1
Geography	6.8	6.8
Elementary science	6.4	6.2

Read table: The 83 pupils in the platoon schools had a median I.Q. of 100.9, while the 85 pupils in non-platoon schools had a median I.Q. of 101.0. Similarly read figures for the other measures listed in column 1.

of the teachers, the types of teaching methods employed, and the content of the curriculum in the different schools. Poor teaching can nullify the advantages of the best school organization, while good teaching can do much to overcome the defects of an inferior organization. Subsequent attempts to appraise different types of organization should include the careful control of these other factors so far as possible.

It should be borne in mind also that a number of desirable learnings are not measured by available tests. Among these are the skills, habits, and attitudes resulting from organized play; the development

of initiative, originality, and other personality traits; the ability to express oneself easily before a group; and the ability to use a library effectively. Many educators contend that such habits, attitudes, and abilities are more readily developed thru the platoon-school organization than thru the traditional organization. Conclusive evidence on this point is not now available. It can be obtained only by the development and use of new measuring instruments, and by more comprehensive and refined methods of investigation than have yet been used to attack the problem.

IT IS much more difficult to reduce a learning situation to a single variable than to achieve similar control in the chemistry laboratory, where one deals with inanimate materials, or even in the biological laboratory, where one can keep the white rats caged from birth and can even control their ancestry. It really is possible only to approximate this type of control in a situation involving human learning. Probably the best method of overcoming the difficulty is to conduct the experiment over an area so extensive or a population so great that the large number of individuals involved will tend to equalize the groups on all factors except the experimental one. For example, the effect of kindergarten training on the child's subsequent school career has been studied by comparing the school records of many children in several cities having kindergartens with those of children in cities not having kindergartens. Similarly, the writer compared the effectiveness of the junior high school with that of the conventional seventh- and eighth-grade organization by studying all the pupils in both types of school in a large city.—Smith, Harry P., p. 250 of this yearbook.

CRITERIA FOR GROUPING PUPILS WITHIN GRADES

FRED B. PAINTER

Principal, East District Elementary Schools, Ithaca, New York

THE PRINCIPLE of individual variation is receiving more and more recognition in the program of the elementary school. Rather than requiring every pupil to follow the same rigid outline, regardless of his health, educational background, and innate ability, an attempt is being made to diagnose the needs of each child and then to give him an educational experience designed to fill his particular need. In attempting to meet the individual and collective needs of pupils, many schemes or plans of instruction have been developed, their details varying as widely as the situations in which they were originated. In some schools a complete individualization of instruction may be the best method of meeting the needs of the individual pupil. In a school where there are many teachers for each grade, the sectioning of pupils into homogeneous groups may be the answer. In still another situation effective results may be obtained by a combination of the individual and group plans. The purpose of this article is neither to describe nor to justify any particular plan of grouping pupils, but to set up criteria by which we may evaluate the effectiveness of such a plan. A list of the proposed criteria is presented first, and then each one is discussed briefly in turn.

1. Are pupils grouped on the basis of actual needs?
2. Do the needs on which groupings are based lend themselves to treatment in separate groups?
3. Are the child's greatest needs given precedence, even if they cannot be met thru the group arrangement?
4. Does the instruction provided for each group satisfy the need for which the grouping was made?
5. Is provision made for shifting children from one group to another as needs are satisfied or as they change in relative importance?
6. Do all pupils receive adequate recognition and encouragement for any special abilities which they may have?
7. Is there a socializing program which frequently brings the children from all educational levels together in cooperative enterprises?

Are pupils grouped on the basis of actual needs?—It cannot be assumed, for example, that all pupils with intelligence quotients ranging from 80 to 90 have similar needs, any more than we can say that all people with temperatures of 105 degrees should be given the same medicine. We now know that not all poor readers encounter the same difficulties. One child may have difficulty in learning to read because of poor eyesight, another because of a very barren language background, and yet another because he has never been taught to use reading as a thought-getting process. Reading is not one skill but

a combination of many specific skills. Unless the children are grouped on the basis of an actual need, little benefit can be expected from grouping except that which may be derived by reducing the number of pupils to be taught at any one time.

Do the needs on which groupings are based lend themselves to treatment in separate groups?—To cite an extreme example, there might be five boys in a grade who were given to stealing, but it is very unlikely that these boys would benefit from an attempt to retrain them in a group by themselves. In fact, if each of them could be placed in a group of children who had no such weakness, there would be a better chance of effecting a cure than if the five wayward boys were herded together. This same principle seems to hold true in teaching most of the broader aspects of citizenship. We can analyze a skill into its elements and teach it part by part; we can do the same with a poem or other bits of subjectmatter; but as yet no standardized technics have been established for the teaching of habits, attitudes, and appreciations. These qualities are *caught* so much more often than they are *taught,* that it might be advisable to have parts of our program in which heterogeneity rather than homogeneity of needs should be the basis of selecting pupil groups.

Are the child's greatest needs given precedence, even if they cannot be met thru the group arrangement?—For example, a serious visual difficulty is of much more concern than the resulting inability to read. A nervous disorder may often be the cause of slow achievement. A child must be able to speak the vernacular before he can be expected to read it, write it, or spell it. One must first learn how to read before he can solve written problems in arithmetic. It is often possible to care for all of a child's serious needs by means of a grouping arrangement that is somewhat flexible. However, if this is not possible, matters of first importance should receive first attention, even if they must be cared for on an individual basis.

Does the instruction provided for each group satisfy the need for which the grouping was made?—Again we hark back to one of the basic truths underlying this discussion, namely, that there is no value in the grouping of pupils per se. Even if all the foregoing criteria have been fulfilled, there is no advantage in arranging different groups unless the teacher of any given group understands the children and their problems well enough to do a better job of teaching them than if the grouping had not been made. Unless the instructional materials, the curriculum, the classroom environment, and the methods of instruction are all bent to meet the situation at hand, the grouping of pupils is wasted effort.

Is provision made for shifting children from one group to another as needs are satisfied or as they change in relative importance?—If the group arrangement does not tend to correct the difficulties which it was designed to meet, there is no use in having the groups. We must recognize any beneficial results of grouping by removing the children from any given group as soon as the reason for their segregation ceases to exist. Otherwise, the whole situation will soon become as static as that of the fixed curriculum with its attendant methods of mass instruction. This is perhaps one of the most objective measures that a busy supervisor has for evaluating the effectiveness of his scheme of grouping. If there is no turnover in the various groups, pathological conditions are not being remedied. If these pupil needs are not being satisfied, any possible value of the plan is lost.

Do all pupils receive adequate recognition and encouragement for any special abilities which they may have?—There is great danger in recognizing only the pathological aspects of a child's educational development. When this is done, the plan of grouping becomes a negative influence only. Those pupils who read two or three books per week are certainly just as deserving of special recognition as are the children who do not read anything. The boy who has a reading defect but who is clever at art and music should not only receive remedial attention in his reading, but should have some recognition of his special abilities as well.

Is there a socializing program which frequently brings the children from all educational levels together in cooperative enterprises?—As already indicated, plans for the homogeneous grouping of pupils have had their greatest success in the teaching of knowledge and skill subjects. If the school program is to be well balanced and is to teach the social aspects of the curriculum, it must give the pupil broad social experiences. Children from wealthy homes can appreciate poverty only thru their contacts with poor children. The production of a play requires stage hands as well as actors. One who has always led sheep cannot be expected to lead asses. The psychologists tell us that there is transfer of training only so far as there are elements of similarity between the learning situation and the situation in which the response is to function. If the skills or facts which are learned in the narrow environment of the small group are to function in life, the learner must have an opportunity to use them in a lifelike situation.

Conclusion—The criteria presented here were developed in a situation where the school enrolments are too small to require more than one teacher for each grade. The number of children in each grade varies from 20 to 35, with most grades falling below 30. The group method of instruction is used in all grades, altho there is great flexi-

bility in its administration. It is believed, however, that these criteria are valid for general use, irrespective of the number of teachers available or the type of instruction employed. While they have not been standardized to the point where a given number of affirmative answers indicates a certain percentile rank, they should serve to stimulate the critical principal or supervisor who wishes to evaluate the plan of grouping used within his school.

IF WE ARE SERIOUS in a desire to interpret democracy in present-day terms, education must offer not the same program to all, but an equal opportunity for all varieties of interests and abilities to find and develop their potentialities. This interpretation does not imply that the school should decide the destination of pupils; it is the responsibility of the pupil to find his place under guidance in a wide variety of offerings. The school must help all levels to work together harmoniously, realizing that each level and each individual is but part of a great social organization. Groups so organized that pupils can work together within them, and at the same time develop the techniques of group interaction, can have a definite part in building up this kind of democratic social order.—Coxe, Warren W., in *The Grouping of Pupils,* Thirty-fifth Yearbook, Part I, National Society for the Study of Education, 1936, Chapter 1, p. 14. (Quoted by permission of the Society.)

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CHAPTER III

APPRAISING ADMINISTRATIVE AND SUPERVISORY PROCEDURES

EDITORIAL COMMENT

LIKE SCHOOL ORGANIZATION, administrative and supervisory procedures cannot be evaluated adequately by means of objective technics alone. It is necessary to resort to subjective judgment based on the goals to be achieved, the history of various ways of administering and supervising a school, and the reactions of teachers, pupils, and parents to the methods used locally. This informal type of appraisal may be supplemented by the study of pupil performance on school tests, pupil and teacher participation in school activities, and other concrete evidence of school progress. Comprehensive and well-kept records and reports are important sources of such evidence. Back of these records and reports are the tests, rating scales, checklists, and other devices used to obtain pertinent information systematically. With the aid of such tools, the appraisal of administration and supervision can proceed far beyond mere guesswork or blind adherence to tradition.

The six articles in this chapter do not purport to cover the entire field of administration and supervision; they represent attempts to evaluate only a few typical phases of this field. The opening discussion, by Kumpf and Kumpf, is a quite informal but illuminating appraisal of teacher participation in several administrative activities. The two articles which follow are concerned with objective methods of studying pupil success and failure. Partington reports a study of the relation between the ages of pupils upon entering the first grade and their later success in the elementary school. Jacob tells of a survey in his school to ascertain where and why failing marks were given to pupils, who gave them, when they were given and in what subjects, and how many pupils were not promoted at the end of the year.

A simple but rather carefully controlled experiment with various methods of school publicity is described by Crawford and Haines. Cobb's article reports a county superintendent's evaluation of informal notes to parents as a substitute for formal report cards. Cummings closes the chapter with an appraisal of a program for determining the reading readiness and visual capacity of children in the first six grades of a small city school system.

Other discussions and illustrations of evaluation in the field of school administration and supervision may be found in the references listed on page 321.—*Editorial Committee.*

THE VALUES OF COOPERATIVE ADMINISTRATION

CARL H. KUMPF

Principal, Eggertsville School, Eggertsville, New York

and

CECILE LAFOLLETTE KUMPF

New College, Teachers College, Columbia University, New York, New York

THE ESSENTIAL ELEMENT of democracy in education is teacher and pupil participation in school administration. No school can honestly pretend to espouse a doctrine of democracy unless those administered have a voice in determining the rules or procedures under which they work. The democratic ideal does not sanction the arbitrary imposition of the principal's will upon the members of his staff. Neither does it permit each member to go his own way without considering the views of his fellows as to the proper aims and procedures of the school as a whole. In the Eggertsville School an attempt is made to carry out these ideals of democratic supervision in actual practise. Teacher participation in the administration of the school is not merely *allowed;* it is *sought*. Such questions as the types of report cards to be used, the kind and extent of extracurricular activities to be carried on, and the most advantageous use of the noon hour are presented to teachers for analytical discussion and subsequent recommendations.

Teacher initiative is encouraged on all sides. Electoral principles predominate where formerly the rule-of-thumb was common. Such freedom may be dangerous unless the principal conceives of leadership as a process of focusing the best thought of himself and his colleagues upon a common problem, and of organizing the results of this united deliberation into an accepted program of action. Under this type of leadership, however, teachers do more than is asked of them; they volunteer for administrative duties. We have found that teachers can and will assume an active, intelligent, and responsible interest in the pupil personnel of the school. Too much cannot be said of the increased willingness, the closer cooperation, the deeper insight, and higher ideals of teachers when working under shared administration. This article discusses certain phases of teacher participation in the Eggertsville School, and then reviews the available evidence of its value in promoting an effective educational program.

Fields of teacher participation—In every school there is a multitude of services which must be the concern of someone. These are not limited to routine matters, but include those that are creatively pro-

gressive in nature as well. Obviously these services have to be performed by the principal or else omitted, delegated, or shared. The sharing seems to be accomplished best thru volunteer service because this capitalizes on the special interests of individual teachers. In the Eggertsville School each teacher volunteers for one or more administrative duties. The principal acts as an assistant to the teacher in her choice, rather than remaining the director and asking the teacher to be his assistant. One such field of service is "science." Selection of this field implies that the teacher has a special interest in elementary science. She checks all available professional literature on the subject, accumulates or notes sources of visual aids, acts as a clearing-house for science materials and information, attends the science sections of teachers conventions and other science meetings, reports her findings to the staff, advises with other teachers regarding the content and methods of science teaching, occasionally teaches a demonstration lesson in science, sponsors the science club of the school, and in general, keeps the other teachers in touch with current trends in the teaching of elementary science. Other fields chosen include "social studies," "visual education," "assembly programs," "library," "club program," "unit planning," "professional literature," "faculty socials," "athletics," "faculty room," "costumes and dramatics," "special programs," and others.

Report-card revision—A good example of teacher participation occurred in connection with the revision of report cards. A few teachers suggested that character development deserved a more prominent place in the records, and that the traditional school marks were outmoded. As a result, a whole year of research was devoted to the problem by the faculty working together and in separate committees. New report cards were developed which emphasize character and citizenship rather than scholastic achievement, and which direct attention to self-improvement rather than to the comparative ratings of different pupils. The teachers helped to bring the new cards to the attention of the community by means of a panel discussion at the last parent-teacher meeting of the year. The parents heartily accepted the revised system of reporting. Without teacher and parent cooperation the effort expended by the teachers would no doubt have been wasted. Thus, teachers have a share in planning the affairs of the school, in carrying out these plans, and in assuming responsibility for the outcomes. An outgrowth of this cooperation is that teachers share also in interpreting the school to the community.[1]

[1] For further description of the method used to acquaint parents with the advantages of the new report cards, see: "A Method of Securing Community Approval of New-type Report Cards." *Elementary School Journal* 36: 488-89; March 1936.

Improved noon-hour schedule—A change in method of utilizing the noon hour will serve as another example of cooperative administration. A teacher pointed out to the staff that the administration of the noon hour could be improved. Subsequent study of the matter led the teachers to formulate an improved schedule, which provided for a lunch period, a rest period, and a play period—all under teacher supervision. The fact that the change had been recommended by the group made all the teachers willing to try the new plan. The task of obtaining public support for the plan was accomplished thru a tea for the parents, at which the principal explained its advantages and disadvantages. In spite of great inconvenience to a few parents, the new schedule was inaugurated with almost unanimous parental consent. Again the outcome would have been doubtful without a sharing of responsibility. Democracy requires that each individual regulate his actions with a sympathetic appreciation of their significance in the lives of others. Parents and teachers are willing to be inconvenienced if the resulting benefits to the children are made apparent.[2]

Curriculum revision—Thru the concentration of small groups upon definite problems and a pooling of the results, considerable progress in curriculum revision has been made in the Eggertsville School. The teachers of each grade, together with the principal, constituted a committee to work on subjectmatter concepts for their grade. The principal merely attempted to guide the discussions along profitable lines. In this manner, appropriate concepts for all grades were determined by the teachers most concerned with them. Moreover, all teachers are now aware of what goes before and after the work of their own grades, because this material was mimeographed and put into use immediately. It represents only a beginning, but at least attention has been focused upon a very important problem and the teachers have accepted the challenge. Cooperation in actual use of the material has been 100 percent, whereas probably not more than 50 percent of the teachers would have cooperated if the principal had dominated the program.

Assemblies—Where there is free communion among teachers, it is possible to secure uniformity where uniformity is essential, and variation and individual experimentation where these are desirable. Before democratic supervision became the rule at this school, assemblies were held on the same day at the same hour thruout the year. Outside speakers, who generally bored the audience because they talked above its comprehension or outside its interests, appeared regularly on the programs. With teachers and pupils sharing in administrative respon-

[2] See: Kumpf, Carl H.: "An Asset—Or a Nuisance?" *National Parent-Teacher Magazine* 31: 27-28; January 1937.

sibilities, a new régime is in operation. There is no set time for an assembly; it comes as a natural result of completed classroom work which will be of interest to other grades. There may be two assemblies in one day if desired. A pupil chairman for the primary grades and one for the upper grades schedule assemblies for the teachers. Time for assemblies is sought by teachers who formerly had to be urged to provide opportunity for this valuable training in their schedules. As a rule, neither the teacher nor the principal is active in any assembly period unless called upon by the child chairman. The principal requests time if he needs it. Otherwise the assemblies are pupil initiated and executed, but teacher guided.[3]

Faculty meetings—The topics to be discussed, as well as the time and frequency of faculty meetings, have all been left to the teachers. Such meetings are no longer the place to hear notices read or lectures delivered by the principal. They are now more nearly a clearing-house for the most advanced ideas and technics of teachers. Notices from the principal or teachers are handled entirely thru the office bulletin-board or by means of supervisory bulletins. The wise supervisor even encourages individual teachers to assume leadership in faculty meetings on certain problems in which they are interested. Of course, professional growth is more pronounced on the part of the teacher who assumes the active leadership of a meeting, but her enthusiasm, created thru sharing responsibility, serves to arouse the increased participation of other teachers. The wise principal constantly throws into the cauldron of educational discussion observations and information regarding significant events outside his own school. This he does in order to encourage the teachers to try out similar procedures, or to throw light on ventures already undertaken, or to guard against mistakes not otherwise foreseen.

Evaluation of teacher participation in administration—When teachers are encouraged to assume positions of leadership, this encouragement is transmitted to the children. Under such a system the principal organizes his work so that teachers are encouraged to realize their highest potentialities, the ultimate purpose being to make the school organization contribute to the preparation of boys and girls for intelligent participation in democratic citizenship. This is the ultimate criterion of a school's or a principal's success. Children in the Eggertsville School are marked on active rather than passive participation in citizenship. Of what value is it to stress such qualities as leadership and responsibility without providing opportunity for their exercise?

[3] See: Kumpf, Carl H. "Are Clubs Desirable in the Elementary School?" *Educational Method* 16: 142-47; December 1936.

It is with reference to such considerations as these that we evaluate teacher participation in school administration. Results affecting teachers and pupils are so closely integrated that they are best discussed together. When teachers have an opportunity to choose certain services and responsibilities, they are more willing to devote time and effort to making the results beneficial to the school. This fact becomes evident when we make a study of the effects of teacher participation in any one field of service. Having participated in administration by carrying on one or more special services, teachers in the Eggertsville School have volunteered for or initiated many other administrative services, thereby showing that they valued the first experience in terms of personal and professional growth. The fact that the teachers appreciate the values of sharing administrative activities is reflected in their close cooperation with the efforts of our student council, which helps to establish the policies of the school. Evidences of pupil leadership can be seen on all sides, beginning as early as the kindergarten. This growth in pupil leadership, we believe, has definitely resulted from teacher participation in administration, because evidence of such leadership was sadly lacking before teacher participation was established. Such concrete evidence as pupil chairmen for all meetings, pupil control of corridors, gymnasiums, and playgrounds, pupil assistance in the principal's office, trustworthy pupil personnel to whom a master key to any part of the building is always available, class and club officers in charge of all class and club functions, assemblies and commencements initiated and conducted by pupils, and pupil-made arrangements for trips and excursions, should convince even the most skeptical that the system has great merit.

An examination of the new pupil records shows an improvement in the attitudes of the children as reflected in their assumption of leadership, initiative, cooperation, and responsibility. This improvement in turn is traceable to the fact that teachers thru their own experience in cooperative administration appreciate the value of similar experiences for the pupils, and that they therefore provide such experiences in abundance. Parent cooperation with the school also has increased steadily and rapidly. A few parents now sponsor school clubs. It seems logical to suppose that the teachers, having a new appreciation of the value of cooperative service to a cause, have sought and gained greater cooperation from the parents.

The reciprocal values to teachers and principal have already been pointed out. In addition, one other value needs to be stressed. The assumption of certain administrative duties by teachers has produced for the principal a margin of time saved, which in turn has been used

in additional classroom supervision and follow-up conferences for the purpose of improving instruction.

Recently teachers have shared in the testing program of the school, including the giving, scoring, and interpreting of test results. The experience of interpreting and applying the results of these tests has already produced tangible effects in the form of more careful pupil analysis and attendant remedial instruction.

To determine the teachers' awareness of their share in administrative duties, and of the results which have accrued to them individually as well as to the community, an inquiry form was submitted to the teachers. From the responses it is apparent that the teachers appreciate the value of their participation and enjoy their administrative activities. A few quotations from these responses will indicate how teachers evaluate such a program:

> I have become more interested in individual pupils and their problems. . . . Shared administration definitely seems to make for more pleasurable teaching. . . . The teacher's opportunity of sharing her findings, in relation to her own work, with other members of the staff, places upon her a new responsibility for judgment and leadership. . . . The management of the school has become more orderly. . . . I feel that I am a functioning unit of the Eggertsville School. . . . I have become interested in grades other than my own. . . . My standards of teaching have been raised. . . . I am more conscious of the educational values behind activities. . . . Contacts occasioned by sharing duties have made teaching more pleasurable.

As the importance of democracy in school administration is increasingly appreciated, we shall undoubtedly develop and improve the means of measuring its outcomes. Subjective judgment will give way more and more to valid measures of pupil and teacher accomplishment. In the meantime, on the basis of all available evidence, the Eggertsville School will continue its plan of teacher participation with an attitude that is both critical and progressive.

THE INDEX at the back of this book is a convenient guide to particular topics and authors.—*Editorial Committee.*

THE RELATION BETWEEN FIRST-GRADE ENTRANCE AGE AND SUCCESS IN THE FIRST SIX GRADES

H. M. PARTINGTON

Principal, Lincoln and Washington Schools, Westfield, New Jersey

A GENERAL INTEREST in the subject of school failure prompted us to investigate the records of 284 pupils who, during the school year 1935-36, were in Grades II to VI, inclusive. Our purpose was to determine the relationship, if any, between the chronological ages of these pupils on entering the first grade and their later scholastic success.

General approach to the problem—To achieve this purpose, two types of data were assembled: (1) the percents of pupils entering school at each age who later made low, average, and high achievement records; and (2) the percents of pupils entering at each age whose later achievements were lower than their intelligence would indicate, commensurate with their intelligence, and higher than their intelligence would indicate.

The grouping of pupils according to their entrance ages is shown below. These ages were computed as of September in the year of entrance.

Age in years and months	*Number of pupils*
5.0–5.5	28
5.6–5.11	95
6.0–6.5	120
6.6–6.11	32
7.0–7.5	9

Because of the small number of children in some of these age groups, the reader is warned against assuming that the conclusions of this study apply equally well to other schools or other groups of pupils. This type of investigation needs to be carried on more extensively before we can be sure that the findings are generally applicable.

The classification of pupils into three levels of school achievement was based upon each child's combined class record to date in reading and arithmetic. In the case of a second-grade pupil, for example, this record represented one year's work only, while for a sixth-grade pupil it represented five years of work. In determining the level of achievement, a mark of *A* or *B* was considered *high; C* was considered *average;* and *D* or below was considered *low* achievement.

The intelligence rating of each pupil was obtained by averaging his scores on two or more of the following tests: *Pintner-Cunningham, Detroit Kindergarten, National Intelligence,* and the *Stanford Revision*

of the Simon-Binet. An I.Q. above 110 was considered *high*; of 90 to 110, *average*; and below 90, *low* intelligence.

Achievement in relation to entrance age—Figure I presents a comparison of the different entrance-age groups with respect to the percents of pupils making high, average, and low achievement records in later years. This comparison reveals that the highest percent of *high* achievement, and the lowest percent of *low* achievement, occurred among the pupils who had entered the first grade at 6.0 to 6.5 years of age. It should be noted, however, that high achievement was attained by a relatively large proportion of the pupils at all entrance-age levels except those who entered at 7.0 to 7.5 years of age. The latter group made the poorest record, while the youngest group (5.0 to 5.5 years) did less well than any of the three middle groups.

Achievement in relation to intelligence for different entrance ages—Altho a certain tendency is apparent in Figure I, such a comparison shows only a part of the picture. We need to know also how well children entering at different ages performed in relation to their intelligence. As shown in Table 1, the distribution of I.Q.'s varied considerably from one age group to another. For example, 54 percent of the

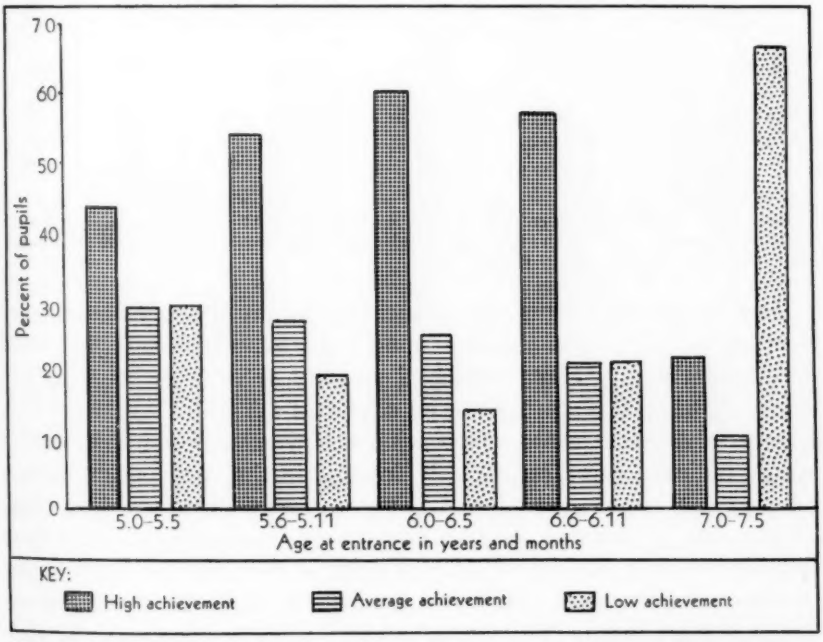

FIGURE I—PERCENTS OF PUPILS AT EACH ENTRANCE AGE MAKING HIGH, AVERAGE, AND LOW ACHIEVEMENT RECORDS

pupils entering school at 5.0 to 5.5 years of age had I.Q.'s above 110, while none of those entering at 7.0 to 7.5 years had such high intelligence. Similarly, 44 percent of the oldest group had I.Q.'s below 90, while none of the youngest group had such low intelligence. These facts may have partially obscured the effects of entering school at different ages as shown in Figure I.

Figure II shows the percents of pupils in each entrance-age group whose achievement records were (1) higher than their intelligence would indicate, (2) commensurate with their intelligence, and (3) lower than their intelligence would indicate. In determining each of these percents, cases representing all levels of intelligence and achievement were included. For example, the percent in any age group doing work commensurate with intelligence included pupils of high intelligence and high achievement, those of average intelligence and average achievement, and those of low intelligence and low achievement.

TABLE 1—DISTRIBUTION OF PUPILS ACCORDING TO INTELLIGENCE AT EACH ENTRANCE AGE

AGE AT ENTRANCE	PERCENT HAVING I.Q.'s		
	Below 90	90 to 110	Above 110
(1)	(2)	(3)	(4)
5.0–5.5	0	46	54
5.6–5.11	8	31	61
6.0–6.5	10	40	50
6.6–6.11	19	54	28
7.0–7.5	44	55	0

Read table: Of the children entering the first grade at 5.0 to 5.5 years of age, none had I.Q.'s below 90; 46 percent had I.Q.'s of 90 to 110, inclusive; and 54 percent had I.Q.'s above 110. Similarly read figures for the other ages listed in column 1.

Perhaps the most significant elements in Figure II are the bars representing the percents of children doing better than their abilities would indicate. These percents increased steadily from 7 in the youngest group to 31 in the group entering school at 6.5 to 6.11 years of age. Conversely, the percents representing achievement lower than ability would indicate, decreased steadily from 42 in the youngest group to 6 in the group entering at 6.5 to 6.11 years of age. There was less variation in the percents of children doing work commensurate with their intelligence, but the highest percent doing such work was found in the middle age group, and the lowest percents were found at the two extreme age groups.

On the whole, the group entering school at 6.5 to 6.11 years made the best showing in achievement as related to intelligence, while the group entering at 5.0 to 5.5 years made the poorest showing. The picture revealed in Figure II, however, may be somewhat exaggerated by the fact that the different age groups did not have equal chances of making a better or poorer showing than their intelligence would indicate. For example, 54 percent of the youngest group could not have shown up better than expected, because they were at the highest level of intelligence, whereas all the pupils in the oldest group could have shown up better than expected because none of them was above average in intelligence.

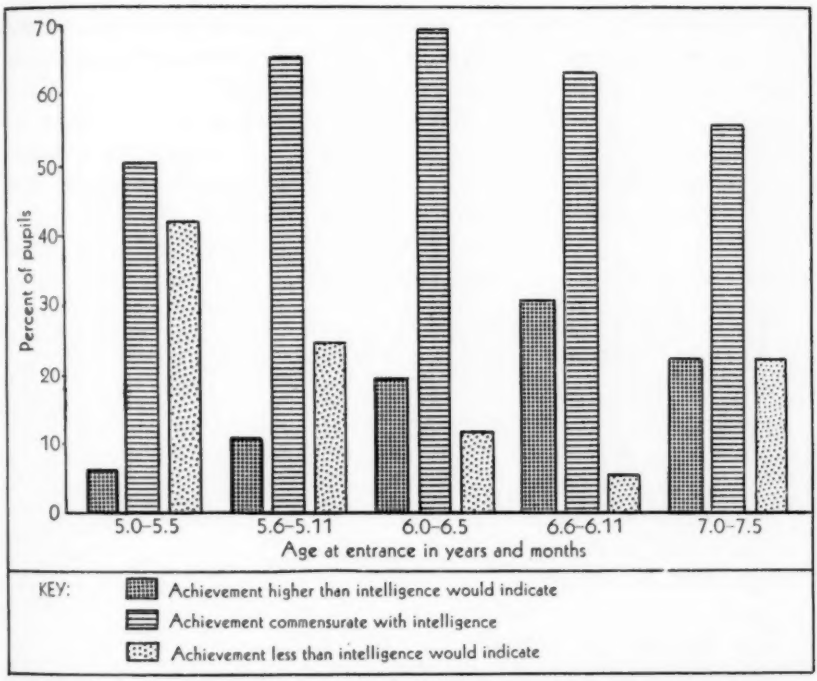

FIGURE II—PERCENTS OF PUPILS AT EACH ENTRANCE AGE MAKING HIGH, AVERAGE, AND LOW ACHIEVEMENT RECORDS IN RELATION TO THEIR INTELLIGENCE

Conclusions—From the evidence obtained in this study, it seems safe to draw the following tentative conclusions:

1. Many of the youngest children (those entering the first grade as early as 5.0 to 5.5 years of age) are not only capable of, but do achieve excellent results.

2. While many of these brighter children in the youngest group do good work, we find here the largest percent of those who are capable

of doing better. Apparently a low chronological age is a handicap to many children in school, and with greater maturity they might achieve better results in the same grade with less strain.

3. A high intelligence quotient is not in itself a guarantee that a pupil will benefit most by entering the first grade at an unusually early age. Mental age is probably a better indicator than I.Q.

4. The combined evidence in Figures I and II indicates that in the school included in this study, an age between 6.0 and 6.11 years is probably the most satisfactory for entering the first grade.

5. We should keep a watchful eye on the bright younger pupil who is doing well, in view of the possibility that he might do even better if he were older. We obviously want our pupils working to capacity.

6. Apparently it is not wise to hold back the older pupils (those who enter the first grade over 7 years of age) even tho their achievement is low.

UNDER THE RIGID GRADE SYSTEM, maladjustment often commences when the child enters the first grade. At this point a few children can already read, and some are ready to begin reading, but a great number are not yet sufficiently mature to profit from instruction in this subject. The progressive school recognizes this fact and so modifies its program that formal instruction will begin at different times for different children. The school that endeavors to maintain rigid grade standards ignores these differences, and endeavors to teach all first-grade children to read at the same time. Under this plan the more able children are compelled to retard their progress so that they may stay with the remainder of the class, while the slow pupils are forced to grapple with ideas that are beyond their mental depth.—Farley, Eugene S., p. 269 of this yearbook.

A STUDY OF FAILING MARKS AND RETENTIONS

WALTER JACOB, JR.

Principal, Emerson School, Plainfield, New Jersey

IN APPRAISING an elementary-school program, the extent of pupil success and failure needs careful investigation. A school in which a large proportion of the children fail to meet scholastic requirements, or in which there is wide variation in the amount of failure from grade to grade and from teacher to teacher, is somehow failing to provide an adequate educational program for every child. Since the writer's school was obviously in need of improvement in these respects, the situation was studied systematically and the results were brought before the teaching staff for discussion and subsequent action.

This study undertook to discover specifically (1) the percent of failing marks given to pupils in the different school subjects and by different teachers at the end of each report period during the year; and (2) the relationship between the percent of failing marks given *during* the year, and the percent of pupils not promoted to the next higher grade or class at the *end* of the year.

Collecting the pupil records—In carrying on the study, the report-card records of twenty-two classes in Grades I to VIII were used. Eleven other classes in the school were omitted, seven because they did not use formal report cards, and four because they were kindergarten groups.

Special forms were used in compiling the information on failing marks and retentions. These forms contained a column for pupils' names and a column for each school subject. The subject columns were subdivided to permit teachers to indicate the supposed reason for failure in each case. Code letters were used to represent the various reasons for failure.

At the end of each report period (six in all), each teacher received the special record form in duplicate for her homeroom class. As she filled in the regular report cards, she placed each failing mark and the reason for it in the proper columns on *one copy* of the special form. As soon as the report cards had been sent out, the teacher returned the special record of failing marks to the principal's office. The other copy of the record form was used only for recording the retention (non-promotion) of pupils at the end of the year.

Determining the percent of failure—In tabulating this information, care was taken to avoid complicated statistical procedures as far as possible. To be of greatest value to teachers the data had to be organized simply and presented clearly.

To determine the percent of failing marks for any teacher or class, it was necessary first to compute the total possible number of such marks for that teacher or class. This was done for each report period by multiplying the number of pupils taught by the teacher, by the number of subjects she taught them. The results of this process for the six report periods were then added to obtain the total possible number of failing marks for the entire year. When this total had been obtained, the *percent of failure* was computed by simply dividing the number of failing marks actually given, by the total possible number of failing marks. This method of computation made it possible to compare teachers or classes having different numbers of pupils or different numbers of school subjects.

To illustrate the method, let us suppose that a teacher taught five subjects to each of forty pupils during each report period. The total number of failing marks which she *could* have given at the end of each period was 40 x 5, or 200. The total number which she could have given during the entire year (six periods) was 200 x 6, or 1200. If she actually gave a total of 60 failing marks during the year, her proportion of pupil failure was 60 ÷ 1200, or 5 percent.

Organizing and presenting the findings—The most difficult phases of the study were the organization and presentation of the findings. Careful thought and many conferences with field and research workers resulted in the preparation of a simple, concise booklet. This booklet contained a series of tables and graphs answering five important questions which anyone might ask, as follows:

1. Where (and why) were the failing marks given?
2. In what subjects were the failing marks given?
3. Who gave the failing marks?
4. When were the failing marks given?
5. How many pupils were finally retained (not promoted)?

A separate section of the booklet was devoted to each of these questions, presenting the appropriate information for each class, grade, and department, as well as for the school as a whole. In addition to the tables and graphs, the booklet contained an introductory page, a page explaining the procedures used, and a page of conclusions, making a total of twenty-five pages. On the reverse side of each table or graph, a few pertinent questions were printed concerning the next table or graph. Questions thus faced the exhibits of information. Tabbed edges with the words "Where," "In What," "Who," and "When" formed a handy finger index to the pages showing data on percent of failure. Green pages used for the data on pupil retention were readily distinguishable from the others.

Because the subjectmatter thus collected was too important to be hastily scanned, it was presented to the teachers in piecemeal fashion.

At each teachers meeting a few large charts duplicating the tables and graphs in the booklet were hung on the walls, and discussion centered on these charts. At the close of the meeting each teacher received those pages of the booklet which had been finished up to that time. This procedure continued until each teacher had a copy of the complete study.

Summary of results—The results of this study caused considerable surprise among the teaching staff. Assuming that they are not untypical, the writer believes they warrant the careful consideration of most public school administrators. They are presented below, together with a series of charts similar to those included in the booklet mentioned above.

1. There was no relationship between the ratings which teachers received on their teaching and the percents of failing marks which they gave to pupils. The number of teachers with high ratings who gave a large percent of failing marks was about the same as the number of teachers with high ratings who gave relatively few failing marks.

2. As shown in Figure I, failing marks were given far more frequently in those subjects which were traditionally academic, or which could be and were taught in an academic fashion. Such marks were given less frequently in subjects which were carried on by methods other than formal textbook teaching. Lack of pupil interest in the more formal

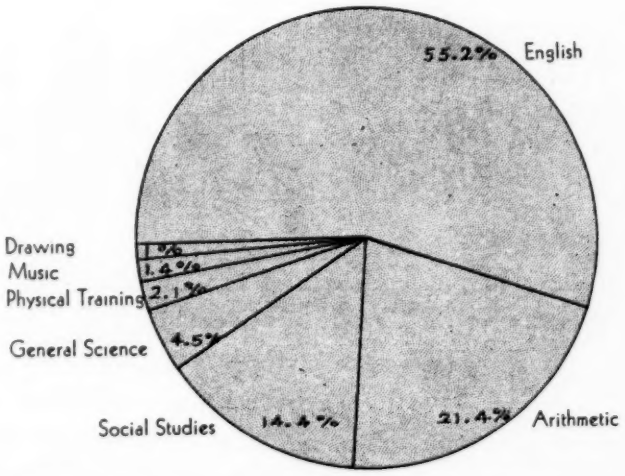

FIGURE I—PROPORTION OF ALL FAILING MARKS GIVEN IN EACH SCHOOL SUBJECT (ALL SUBJECTS = 100 PERCENT)

subjects may have been partly responsible for this situation. It is also possible that these subjects lent themselves more readily to a rigorous marking of pupils.

3. The teachers gave "carelessness" of pupils least often as a reason for failing marks. The "inability" of pupils to master the curriculum content was reported more than twice as often, while "no effort" on the part of pupils was reported more than three times as often as "carelessness" in explaining pupil failure. These facts suggest a need for improvement in curriculum content or in methods of teaching, or perhaps in both.

4. As shown in Figure II, there was great variation in the percent of failing marks given by different teachers. One teacher's percent of failure was 58 times as large as those of several other teachers.

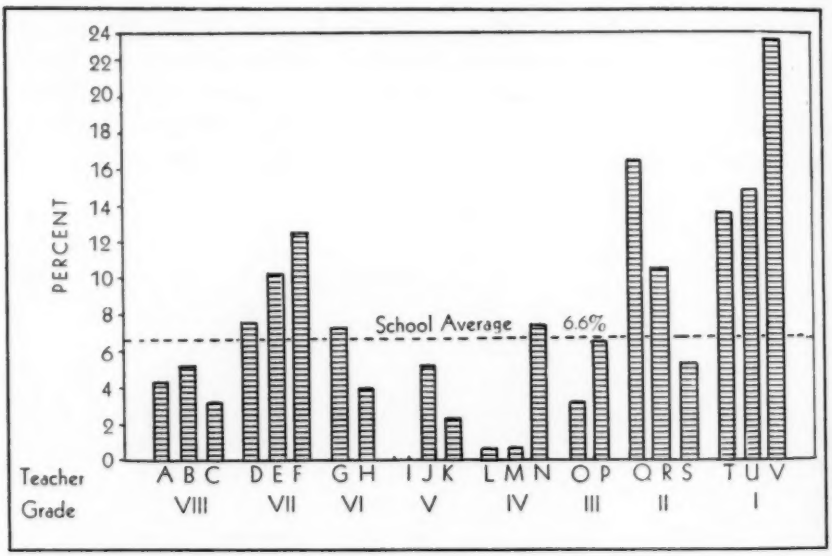

FIGURE II—PERCENT OF EACH TEACHER'S MARKS THAT WERE FAILING MARKS

5. A lack of consistency in the markings of individual teachers is revealed in Figure III. The variation in the percents of failing marks given to different classes by the same teacher was as high as 1500 percent. This variation was apparently not due primarily to differences in the average abilities of the classes, because the class groups were heterogeneous in nature. The pupils were not grouped according to ability.

6. The largest percents of failure appeared in the first, second, and seventh grades, respectively, while the lowest percents were found in the intermediate grades. (See Figures II and V.) The unusually high percent of failure in the first grade leads one to suspect a peculiar lack of adjustment between the school program and the needs of pupils at that level.

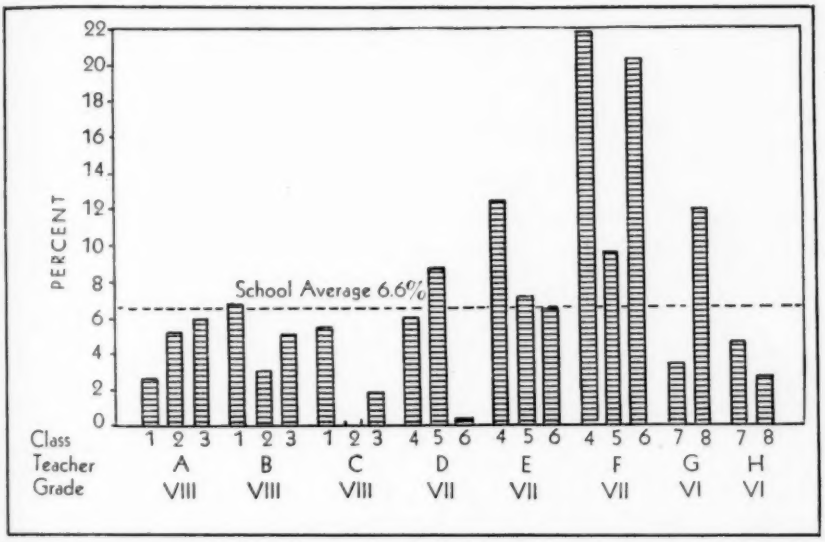

FIGURE III—PERCENT OF ALL MARKS THAT WERE FAILING MARKS IN CLASSES TAUGHT BY EACH UPPER-GRADE TEACHER

7. Figure IV indicates that the number of failing marks was largest in January, at the end of the third report period. The number of such marks was lowest in October and December, and after reaching its peak in January it fell off steadily to a relatively low point in June. This trend may have been due to a natural lowering of morale and efficiency during the middle of the winter on the part of both pupils and teachers.

8. Figure V compares the percent of failure *during* the year with the percent of retention (non-promotion) at the *end* of the year for each grade. The average percent of failure in all grades was 6.6, whereas the average percent of retention was 8.9.

9. There was a positive correlation [1] of .81 (with a probable error of .05) between the percent of failure in a class and the percent of retention in that class.

[1] The coefficient of correlation is a mathematical measure of relationship between two series of factors. The lowest possible correlation is 0.00 and the highest possible is 1.00. Correlations can be either *positive* or *negative*. A positive correlation indicates a tendency for the factors to increase or decrease together; a negative correlation indicates a tendency for one factor to increase as the other decreases.

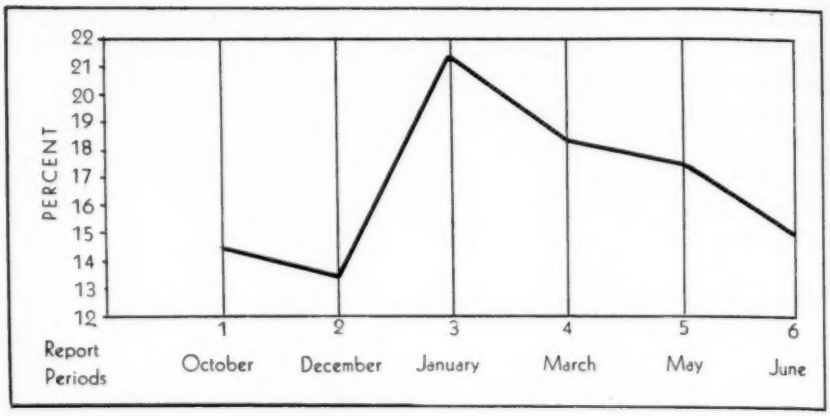

FIGURE IV—Percent of All Failing Marks Given at the End of Each Report Period (All Periods = 100 Percent)

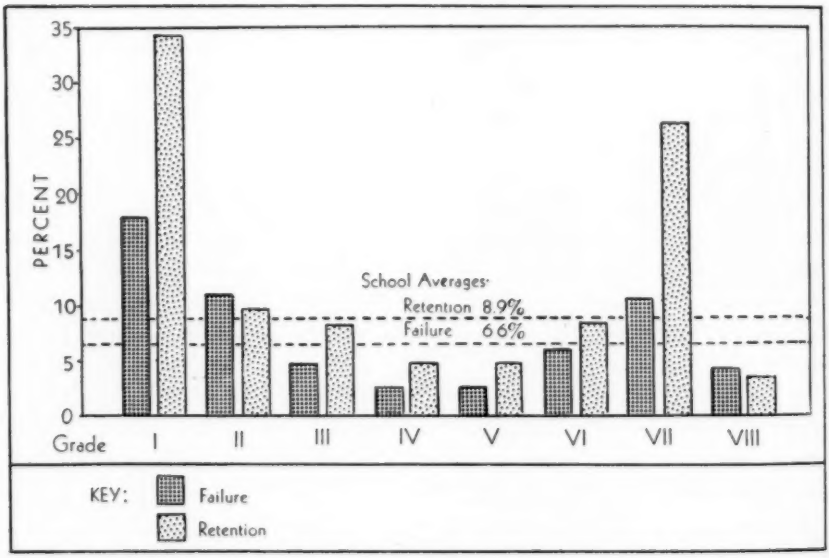

FIGURE V—Percents of Failure and of Retention in Each Grade

Conclusion—It is easier to discover such facts as those shown above, than to determine their causes. No single factor can be held responsible for the observed differences in percent of failure and in percent of retention. Probably these differences are due to a combination of several factors, such as the following:

1. Differences in the personalities and abilities of teachers
2. Differences in the teaching loads carried by teachers
3. Differences in the standards of pupil achievement set by teachers
4. Differences in methods of determining pupil marks
5. Differences in the natural appeal of the various school subjects
6. Differences in the suitability of the curricular program at various grade levels and in various subjects.

Since the relative importance of these factors in the total situation is not definitely known, all of them should receive careful attention. Above all, in the writer's judgment, is the need for thoro appraisal and revision, if necessary, of the kind and amount of work required of pupils of various abilities in each grade and in each school subject.

> WE do not recommend elimination of the failure mark, but a different method of determining it. We now set high standards; those who do not meet them fail and must repeat. Under this arrangement the child too often is ignored, and extenuating conditions or circumstances are not considered. Ideally, may we not hope to use the term "failure" only in exceptional cases? May the mark not be based upon a detailed knowledge of the pupil, so that failures will occur less frequently and then only to those who have profited little or not at all from the course or to those who need a complete mastery of it for further work?—Heck, Arch O., *Administration of Pupil Personnel,* Ginn and Co., 1929, p. 355. (Quoted by permission of the publishers.)

EVALUATING METHODS OF CONTACT BETWEEN THE SCHOOL AND THE HOME

C. C. CRAWFORD
Professor of Education, University of Southern California, Los Angeles, California
and
JAMES CLAYTON HAINES
Superintendent of Schools, Lennox, California

THERE is a very general faith in school publicity, but considerable doubt as to the best ways of achieving it. This article describes an attempt to evaluate certain publicity channels, in the hope that the technic used here may be applicable in the evaluation of other types of school publicity.

Many of the fruits of school publicity are so intangible that they are nearly impossible to measure. The lack of an adequate yardstick in this field is a serious handicap. The yardstick used in this study was the attendance of parents at parent-teacher meetings. The underlying assumption was that the kinds of publicity that brought the parents to these meetings in great numbers would probably obtain superior results when other phases of school work were to be publicized. This assumption, altho it seems reasonable enough, is not based upon any objective data.

Publicity methods compared—Six types of school publicity were compared, to see which one brought the best response in attendance at the parent-teacher meetings. These methods were as follows:

1. *Simple mimeographed notice*—A regular mimeographed letter over the typewritten name of the head of the parent-teacher association was sent home in the hands of each pupil to present to his parents.
2. *Mimeographed notice with teacher's signature added*—The second type of publicity was identical with the first, except that each classroom teacher signed the note in ink below the mimeographed name of the head of the parent-teacher organization. This was supposed to give the notice a special appeal and make it more personal.
3. *Mimeographed notice with an attached coupon for the parent to sign and return*—The third method included exactly the same letter as used in method 1, with the addition of a parent-signature coupon to serve as a check on whether the parent actually got the message.
4. *Mimeographed notice, plus the teacher's signature, plus the parent-signature coupon*—The fourth method included both of the special items that were added in methods 2 and 3.
5. *A copy of the simple notice in the child's own handwriting*—Each pupil copied the letter in his own individual handwriting, and took it home to show to his parents. This supposedly gave the pupil a personal interest in getting the message home, and was expected to arouse a different kind of interest on the part of the parent.
6. *Personal visits to homes by classroom teachers*—A limited amount of visiting in representative homes was done by two teachers, to determine the effect of

direct contact with parents as measured by later attendance at the parent-teacher meetings. It was realized that this method was expensive in time and effort, and the desire was to find out whether the result justified such an expenditure.

Conditions under which methods were compared—Identical experimental procedure was employed in each of two schools—one in the so-called "better" part of town, and the other in a less desirable neighborhood. Since the relative merits of the different publicity methods were found to be the same in both these schools, there is reasonable assurance that the character of the neighborhood was not a significant factor in the experiment.

Obviously, one method of sending notices could not be used one month and another method the next month, because seasonal changes or program changes might have invalidated the results. Also, one method could not be used in the lower grades and another in the upper grades, because it is a well-known fact that parents generally attend fewer parent-teacher meetings as their children grow older and become more advanced in school. Therefore, a system of rotation was set up. Each school was divided into groups, each group using a different type of notice from that used in any other group. For each succeeding monthly meeting the kind of notice was rotated, so that when the study was completed each group in the school had used each method of publicity once, and all the methods of publicity had been used in connection with each monthly meeting. The teacher-visit method was employed to only a very limited extent because of the labor involved, but the parents to be visited were selected carefully. Thus, conditions were well controlled and irrelevant factors were held constant so far as possible. As a result, any differences in attendance may fairly be ascribed to the differences in the methods of publicity used.

All teachers received very definite directions regarding the nature of the verbal instructions to be given to pupils when the notices were distributed. Otherwise some teachers might have announced the meetings so emphatically and others so indifferently as to cover up any differences between the several types of messages to be sent home.

Numerical comparison of results—If the proof of the pudding is in the eating, five of the methods used in this study were about equal in effectiveness, as shown in Table 1. The four types of mimeographed notices showed almost exactly equal results, namely, a 20 percent response. The handwritten notice resulted in a response of only 13 percent, while the method of home visiting, in spite of its excessive time demand, produced a 20 percent attendance at the meeting.

The great uniformity of results obtained by the publicity methods used seems to point to a rather interesting conclusion regarding school publicity in general. The suggestion is that the function of school adver-

tising is to promote the consumption of "staple goods" rather than "fancy goods." When advertising is used to promote the sale of a novelty or to awaken an interest where none already exists, the character of the appeal may be very important. But where an advertisement merely serves as a *reminder* of an interest already awakened, a very simple and dignified appeal is as likely to produce results as a unique, high-pressure, or bizarre approach.

TABLE 1—ATTENDANCE AT PARENT-TEACHER MEETINGS FOLLOWING SIX KINDS OF PUBLICITY

KIND OF PUBLICITY USED	NUMBER OF PARENTS REACHED	PARENTS ATTENDING MEETING	
		Number	Percent
(1)	(2)	(3)	(4)
1. Simple mimeographed notice	762	159	21
2. Simple mimeographed notice, plus teacher signature	748	148	20
3. Simple mimeographed notice, plus coupon for parent to sign	760	146	19
4. Simple mimeographed notice, plus teacher signature and coupon for parent to sign	722	144	20
5. Simple notice copied in child's own handwriting	329	42	13
6. Teacher-visit to home	54	11	20

Read table: Of the 762 parents who received the simple mimeographed notice of a parent-teacher meeting, 159 or 21 percent attended the meeting. Similarly read figures for the other kinds of publicity.

Summary—Five of the six methods of school publicity used in this study produced almost identical percentages of response in terms of attendance at parent-teacher meetings. Having the pupils copy notices in their own handwriting produced a slightly poorer response than did the mimeographed notices or the visits of teachers to the homes. The tentative conclusion from these results is that parents who attend the meetings do so because they have a fundamental interest in the school's work, and that this fundamental interest is little affected by superficial differences in the publicity technics employed.

This study is presented as an illustration of procedures used in the evaluation of school publicity, rather than for the significance of its final conclusion. It is hoped that other investigators may find this procedure helpful in appraising other and more important types of school publicity.

APPRAISING INFORMAL REPORTS TO PARENTS

W. K. COBB
County Superintendent of Schools, Ventura County, California

THIS ARTICLE is concerned with the appraisal of the informal note used in Ventura County, California, as a substitute for formal report cards. To make such appraisal effective, it is necessary to review briefly the development of this program in Ventura County.

The change from formal to informal reports in this county was the result of certain studies made by the Ventura County Guidance Committee, and of subsequent recommendations made by this committee in the spring of 1933. The committee, composed of representative educators of the county, was a study group only, and its recommendations were binding upon no one. In two local school systems, however, the informal note had been used experimentally prior to the committee's recommendation, and the results indicated that the new type of report would be useful in practise and acceptable to the community.

Basic principles and procedures—The guidance committee, after careful analysis of early experiments, recommended certain principles which should be observed in changing to informal reports. These suggestions are given here in a condensed form:

1. The community should be thoroly prepared in advance if letters and visits to parents are to supplant the time-honored reports of competitive marks.
2. Begin the letter to parents with encouraging news.
3. Close with an attitude of optimism.
4. Solicit the cooperation of parents in solving the child's problem if he has one.
5. Speak of the child's growth—social, physical, and academic.
6. Avoid comparing the child with other pupils; such comparisons are odious at best.
7. Speak of the child's achievement in relation to his own ability.
8. Compare the child's present efforts and achievements with his earlier record.
9. Remember it is our professional duty to learn the reason why, if the child is not making what for him is normal growth.
10. Remember also that this letter is a professional diagnosis, and is therefore as sacred as any diagnosis made by a physician.
11. Send only a few letters at a time.
12. Be brief.
13. Use a vocabulary that the parents will understand.
14. Ask parents concerning children's hobbies.
15. Invite parents to visit the school.

Copies of these suggestions, together with illustrative letters, were sent to all teachers. Members of the guidance committee met with the teachers to discuss procedures relating to the informal report and the preparation of the community for the change. Parents were advised in advance of the change by means of a series of mimeographed letters, by special public meetings held at the various schools, and thru the

regular meetings of the parent-teacher association. Much credit is due this organization, which not only recognized the values in the proposal, but also assisted in spreading information regarding these values.

So much has been written regarding the need for changing to informal reports, that it is unnecessary to repeat the arguments here.[1] Nor does it seem necessary to comment further on the form of the letters to parents. Two such letters are reproduced below:

Dear Mr. and Mrs. Smith:

This is to report that Frank is progressing satisfactorily at school. His academic work is good, and his attitude toward his work, his classmates, and his teachers is excellent. He knows his subjectmatter thoroly, but is inclined to be careless in his written work. Frank is a splendid boy and is always courteous to his teachers and fellow classmates.

I would like to have you look over his notebook and sign it, if you care to. Any suggestions you wish to make regarding his work will be greatly appreciated.

Dear Mrs. Casey:

Howard is showing a marked improvement in his penmanship. His arithmetic, too, is much improved. I am also happy to report that his attitude toward his work and the school is much better. He needs to improve his writing, however, and I am giving him special attention in this particular.

We appreciate your cooperation very much, and sincerely hope that you will be able to visit the school again shortly.

Effects on the children—An informal report of this kind is most valuable from the standpoint of the child. It recognizes abilities and achievements never mentioned on the formal report card. It tends to eliminate in the child of lesser ability the heartache due to failure, and reduces the danger of mental and emotional maladjustment. The superior child no longer has the old incentive to boast, and he no longer works for grades. The desire to fool the teacher and to "get by" without study had disappeared to a marked degree. For all pupils the new plan omits the unhappy comparison with the progress of others. It has eliminated cutthroat competition, and has helped to develop the spirit of friendly cooperation so necessary in a modern program of education.

Attitudes of parents—Parents like the informal type of report card. Many say, "We have been needing a change like this for years." Others say, "This is something that we can understand."

Surveys have been made in a number of districts within the county to learn just what parents thought of informal reports. In one district 99 percent of the replies were favorable; in another, 95 percent. In only one district has there been a return to formal report cards in the elementary schools. This change was due to two factors: (1) The com-

[1] Other articles on the subject by the present writer are as follows: "Ventura County Schools Abolish Formal Report Cards." *California Journal of Elementary Education* 2: 243-45; May 1934. ¶ "Formal Report Cards Can Be Abolished." *Nation's Schools* 16: 37-38; October 1935. ¶ "The Report Card Progresses." *California Parent-Teacher* 12: 12, 32; November 1935.

munity had not been properly informed of the advantages of the informal type of report; the latter had been introduced merely because other districts were using it. (2) A new board of education, elected by a community that was disgruntled about many other things, decided to return to formal report cards without surveying the sentiments of the parents.

Reactions of teachers and administrators—The teachers like reporting to parents informally. They welcome the opportunity of coming in contact with parents either personally or thru the parents' replies to the informal reports. These contacts enable teachers and parents to exchange points of view, and bring about a better understanding of the pupils.

Teachers say that an informal report takes more time to write, but that it is pleasanter to prepare because it is fairer to the pupil. It recognizes all the abilities of the child and admits his shortcomings. Teachers are convinced that an informal report should be brief and to the point. Parents are more apt to reply if the note is short. The note must be definite, however, and state the truth without evasion, even if the information contained in it is not complimentary to the pupil. Teachers regard an informal report as a written diagnosis of the pupil's abilities and accomplishments.

Teachers realize also that much care should be given to the form of the note. Most of them send home samples of school work to illustrate points in the report. Many say that they desire most of all to have parents come to school to discuss the pupils' progress, altho they do not encourage parents to do this while classes are in session.

School administrators likewise state that they like the informal means of reporting to parents. They feel that it is one of the best means of establishing proper school-home relationships, and that it has brought the school and home closer together in the solving of childhood problems. Some schools have a visiting week every quarter, just after the reports have gone out, as a special time when parents are urged to visit the school. As a rule, the teachers spend one or more evenings at the school building during that week, so that parents may have an extra opportunity to talk with them.

Progressive educators generally agree that the informal note is probably the best means of reporting to parents. If we are to take into consideration the individual differences among children, and provide a flexible school program to meet these differences, we must use a flexible means of reporting to parents. The informal report seems to serve this purpose best.

Conclusion—Modern education has to do with the development of the whole child, including his physical, mental, emotional, and social

growth. The philosophy which demands the informal report recognizes that children differ physically, mentally, socially, and temperamentally, and that they should not be run thru a grading machine as oranges, nuts, and beans are sorted.

In the program of the school, emphasis should be placed both upon the individual needs of the child and upon his social development. The well-prepared informal report recognizes and encourages the growth of the child in his relationship to his group and in his individual abilities. This recognition of all phases of child nature has developed better attitudes in the pupils. Administrators, parents, and teachers in Ventura County are generally agreed that the elimination of formal report cards and competitive marks has brought about better understanding and wiser treatment of our boys and girls both at home and at school.

WHATEVER its relative importance in the general scheme of things educational, we are certain as we look back and then ahead, that the prime purpose of home reports is served if they bring about more frequent and more intelligent conferences of parents and teachers on the all-important question of the all-round development and growth of the individual child. Only in this way can the best opportunity for education that human mind can devise be given to children.—Warren, Julius E., in *Harvard Teachers Record,* April 1935, p. 70.

EVALUATION OF A PROGRAM FOR TESTING READING READINESS AND VISUAL EFFICIENCY

MABLE E. CUMMINGS

Elementary Grade Supervisor, Rapid City, South Dakota

AN IMPORTANT PROBLEM of elementary-school supervision is that of determining when children are ready for reading instruction, and of discovering specific eye difficulties which may interfere with their learning to read. Among the devices recently developed to meet this problem are the *Betts Ready to Read Tests*.[1] These tests are intended to measure reading readiness, acuity of vision, oculomotor habits, and perceptive ability. Those parts of the battery which deal with vision, oculomotor habits, and perception require the use of the Keystone Ophthalmic Telebinocular.[2] This instrument and the accompanying slides are designed to test the vision of each eye while both eyes function simultaneously. The purpose of this article is to summarize some of the results of using these tests in a typical school system for one year.

Scope of the testing program—During the year 1935-36, one or more of the Betts tests were administered to every child in the first six grades of the Rapid City, South Dakota, schools. It had been planned to use the reading readiness tests and the vision tests with all first-grade children, and to use the vision tests and the oculomotor and perception tests with all children showing reading disabilities in grades above the first. This plan was changed, however, because so many parents and teachers requested that the vision tests be given to their children. Accordingly, the vision tests were given to all children in the system, and the other tests were administered to as many of the children having reading handicaps as time permitted. Only a very few children were given the full battery of tests.

Factors considered in the appraisal—The school administration in Rapid City has frequently been asked, "Would you advise other schools to adopt such an extensive program?" In trying to arrive at a defensible answer to this question, an attempt has been made to evaluate the program under these headings:

1. Cost of the year's program
2. Time required to complete the testing
3. Qualifications of persons administering the tests
4. Results of the Snellen test and Betts test compared
5. Attitude of eye specialists

[1] Obtainable from the Keystone View Company, Meadville, Pennsylvania.
[2] Manufactured by the same company.

6. Evidence of eye difficulty among poor readers
7. Attitude of parents
8. Percent of correction obtained.

Cost of the program—The entire cost for testing equipment was $96.50. This meant an outlay of about seven cents per pupil. The total expense was distributed as follows:

Keystone Ophthalmic Telebinocular	$75.00
Record forms	17.50
Pads for reports to eye specialists	4.00
Total	$96.50

Time required to complete the testing—During the year, 1261 children were tested. The testing was begun in October and was completed by the middle of March. At first, both the school nurse and the grade supervisor worked at the testing. Near the close of the year's program, an elementary-grade intern gave some assistance. The school nurse became so involved with multitudinous other duties that the supervisor had to carry on the work alone. She was able to give not over an average of three days a week to the testing.

It seemed impossible to test first-grade children in much less than ten minutes per child. In the primary grades, the time required for each child ranged from ten to twenty minutes, while in Grades III to VI the testing could be completed in from five to fifteen minutes. After getting the testing systematized so that there were no waits between cases, the time was reduced to about seven minutes for each child in the upper grades. In order to test as rapidly as this, it was found necessary to have all personal-data blanks filled prior to the testing. Elementary-grade interns helped with the recording. It was possible, however, for the administrator of the tests to do her own recording. In Grades III to VI, thirty children could be tested in one day, while only twenty primary children could be tested in a day.

Qualifications of test administrators—Most classroom teachers are capable of giving the tests, but few teachers have the time to become thoroly familiar with, and to give them. If possible, one person should do all the testing thruout the school system.

For best results, the person selected to do the testing should have patience, insight, ingenuity, a workable knowledge of child psychology, an interest in the work, and a willingness to do careful work. Patience is needed in dealing with a child who has an overwhelming desire to wear glasses, and who is bright enough to make consistent responses to every attempt at rechecking. A knowledge of child psychology, ingenuity, insight, patience, and kindliness are necessary in dealing with a first-grade child who has been frightened about the tests. The

slow child and the timid child need expert help in learning what is wanted and how to tell what they see. To forestall the frightening of younger children by upper-grade children, it was found wise to test all the primary children first in any one building.

Results of the Snellen test and the Betts test compared—Every child above the IIB division in the Rapid City system had been tested by the Snellen method.[3] A comparison of the results of this test with the results of the Betts test showed that the latter revealed 32 percent more eye difficulty than did the Snellen test. Fifty percent of the children registering some eye difficulty on the Snellen test registered no difficulty on the Betts test. Between the two tests there was a disagreement of 83 percent. A comparison of the results of the Betts test with the diagnoses made by local eye specialists on cases referred to them showed an agreement in 62 percent of the cases.

Attitude of eye specialists—For the most part, the eye specialists welcomed a chance to cooperate in the program. Before the testing was started, a bulletin from the office of the superintendent was sent to every eye specialist in the city. This bulletin included a description of the Betts test, a copy of the record forms, and a copy of the report blanks to be sent home with each child needing the attention of an eye specialist. Three eye specialists asked for conferences in regard to the tests and expressed an interest in the program. Only one specialist discredited the tests to parents.

The eye specialists were not equipped to make muscular corrections; so when children failed on those parts of the test which reveal muscular imbalance, no report was sent to the parents. Thus we avoided some occasion for parents and physicians to criticize the tests unfairly. As soon as equipment for correcting muscular difficulties is installed by a majority of the specialists, these cases will be reported to the parents.

Evidence of eye difficulty among poor readers—Careful checking of results on the Betts tests showed that of the children reported as needing the attention of an eye specialist, 46 percent were either reading failures or poor readers. Of these cases, 31 percent had low enough I.Q.'s to indicate that mental immaturity could have been responsible for most of the difficulty. This left 69 percent of the cases of reading disability that might fairly be attributed to eye difficulties alone.

Attitude of parents—An attempt was made to inform parents as to the purpose and the character of the tests. The school nurse visited the homes of children needing the immediate attention of an eye specialist. The grade supervisor gave talks before the different parent-teacher

[3] The *Snellen Letter Test* is a letter chart devised to check visual acuity. One eye is tested at a time while both eyes are kept open. The person being tested is seated at a distance of twenty feet from the chart. On the chart are rows of letters, each succeeding row being reduced in size. The percent of visual acuity is measured by the number of rows correctly read.

groups, using all the testing equipment to illustrate her discussion. In most cases the parents were interested and willing to cooperate so far as they were able.

Percent of correction obtained—Only 5 percent of the cases reported as needing such attention received the help of an eye specialist. Some of this failure was due to indifference and ignorance on the part of the parents, but in at least 75 percent of the cases it was due to lack of money. Charitable funds were available in limited amounts for treating such cases. Some of these cases will be taken care of another year.

Conclusion—In the light of the above summary, do we recommend such an extensive program of testing for other schools? The writer does not believe that the program should be duplicated, but that it should be shortened in some respects and lengthened in others. It is recommended (1) that for the first year no attempt be made to check the vision of *every* child in the system; (2) that all children new to the system be given the Betts test in preference to the Snellen test; (3) that the reading-readiness test be given to all first-grade children showing evidence of inability to do first-grade work; and (4) that the full battery of tests be given to all cases which would ordinarily be referred to a reading clinic.

The writer feels that the giving of these tests was a very important part of the year's work, but that the results have not been of enough value to warrant such an unbalanced supervisory or health program as was carried on in the Rapid City schools during 1935-36.

ANOTHER PROCEDURE for evaluating the effectiveness of remedial instruction is to photograph the eye movements of the pupils, and to compare this record with the record secured before the teaching with respect to number of fixations, length of fixations, and number of regressive movements. For pupils whose eye movement habits were very inferior when the remedial work was started, such a comparison may be very significant. On the other hand, the improvement in power to interpret meaning by pupils whose eye movement habits were already quite mature may not be reflected to any marked extent by changes in the eye movement records.—Traxler, Arthur E., p. 417-18 of this yearbook.

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CHAPTER IV

EVALUATING THE CURRICULUM

EDITORIAL COMMENT

FUNDAMENTAL APPRAISAL of an existing curriculum is usually undertaken as part of a program of curriculum revision. It would be useless to evaluate a course of study without subsequently trying to improve it. It would be equally unwise to revise a course of study without first determining how well it meets appropriate criteria.

Both appraisal and revision must be based on the same educational philosophy and the same guiding principles or objectives. Often the thoro appraisal of an existing course of study involves the collection of materials which will have a place in the revised course. In practise, therefore, there may be no sharp distinction between appraising and building a curriculum.

If the curriculum is conceived broadly—as the aggregate of children's experiences and activities in the school—it may be partially appraised thru the results of valid achievement tests and other measures of pupil development. Achievement tests, however, obviously cannot determine the value of subjectmatter. They can only ascertain how well pupils know and are able to use subjectmatter.

There are many possible criteria for evaluating and revising curriculum content. Among them are present practises in other schools, children's experiences, adult needs, children's creative impulses, judgments of frontier thinkers concerning the issues of modern life, present social values, the social heritage of the race, and desirable human abilities and attitudes. A combination of approaches is usually desirable.

The contributions to this chapter necessarily represent relatively limited phases of curriculum appraisal. Hobson describes the use of the case-study method in evaluating the curriculum for each individual child. Lawson reports an attempt to appraise curriculum content with reference to major educational objectives and courses of study used elsewhere. Holmes reviews a study of the subjects liked and disliked by the children of her school. Mackintosh describes the evolution of a social studies curriculum for the later elementary grades. Breed presents a comprehensive picture of problems and progress in developing a course of study in spelling. Grossnickle proposes criteria for judging the teaching of division. Fritz tells of two attempts to evaluate poems by obtaining children's reactions to them.

Since many aspects of curriculum appraisal are not covered in this chapter, the reader should consult also the references listed on page 375.—*Editorial Committee.*

EVALUATING THE CURRICULUM FOR THE INDIVIDUAL PUPIL

CLOY S. HOBSON

Superintendent, Genoa Public Schools, Genoa, Illinois

THE IDEAL of adapting the school program to the needs and abilities of the children has become almost universal. In the typical school of a few years ago, the administration set up a standard curriculum and expected the child to conform; in the progressive school of today, the child is considered the standard and the school attempts to build curriculums which conform to his requirements. Common practise, however, falls far short of this ideal. Many schools have been content to consider pupils in the mass—to establish and evaluate the curriculum in terms of mass needs and abilities. The peculiar needs of the individual pupil, particularly of the pupil who deviates widely in any direction from the central tendency of the group, have not been a major consideration in constructing and evaluating courses of study. The school may adapt its program to the child by building a general curriculum suited, with only slight individual modifications, to the requirements of the large central group, and individual curriculums for those pupils whose capacities vary widely from the capacities of the central group. Evaluation of each of these curriculums in terms of the pupil's individual needs and abilities is necessary to attain the ideal.

DIFFICULTY OF ADEQUATE EVALUATION

The task of evaluation is fraught with difficult problems. How may the teacher know with certainty which pupils belong to the large middle group for which the established general curriculum is suitable? How may the teacher discover which pupils deviate far enough from the central tendency to need radically changed or wholly different curriculums? How may the teacher know whether a more suitable adjustment of the curriculum to the pupil can be made by reclassification of the pupil or by changes in content within the grade? How may the teacher know whether or not a given maladjustment is a curriculum problem? The symptoms of poor adjustment may be caused by emotional, social, or physical disorders, or by defects in instructional methods. These problems and many others baffle and often discourage teachers and supervisors.

To solve these problems the school must have more knowledge about the curriculum and about the child than it commonly has. In any task of measurement, the qualities both of the thing measured and of the measuring device must be known. The curriculum to be measured and

the pupil used as the standard of measurement are extremely complex. The knowledge and skill required to measure accurately the items in the course of study for a particular grade in terms of the abilities and needs of a particular child are probably much greater than the educational profession possesses at the present time. The profession can improve its knowledge and skill only by working constantly at the task and by pooling the experiences of its members.

A METHOD OF APPRAISAL

General features—The method used for evaluating the curriculum in the school system in which the writer is employed is an outgrowth of the diagnostic and remedial program used for maladjusted pupils. The preliminary procedures are much the same as those formerly used to discover minor maladjustments of any kind among the rank and file of pupils. The point of view, and some of the later procedures in cases in which the curriculum must be adjusted to the child, are different from those in the usual program of guidance. The following paragraphs describe in general terms the method used:

1. To facilitate the appraisal of the curriculum in terms of pupil needs and abilities, the school keeps and makes available to the teacher continuing individual records of the pupils, including data pertaining to each pupil's mental, physical, emotional, social, and economic status and habits.

2. The school provides record forms for diagnostic and remedial work, and instructs the teacher in their use.

3. The record forms provide outlines under which teachers may fill in facts and opinions about the pupil and about the subjectmatter of the curriculum. The outlines are as brief and simple as possible, yet complete and detailed enough to be effective. They include only material and terms which the teacher can use.

4. The topics in each outline are general enough to include any conditions which need description in a case. Detailed directions for use, and detailed outlines of specific items under the general topics, are supplied in a manual.[1]

5. The record forms provided vary in completeness and complexity. A problem case may be solved long before all the facts called for on a complex form have been collected and recorded. For simple cases a simple form is adequate. All cases are recorded at first on a simple or preliminary form; those found to be more difficult or complex are transferred to a more complete form. Supplementary forms may be required for cases extending over a number of years.

[1] Published materials may be used instead of a local manual. For example, see: Torgerson, T. L. *The Diagnosis and Treatment of Pupil Maladjustment*. Ann Arbor, Mich.: Edwards Brothers, Inc.

6. A study of the psychology of subjectmatter aids teachers in comparing the pupil's nature with the learning processes involved in the mastery of the subject.

7. The results of standardized tests and of school examinations are usually inadequate and often unreliable for individual diagnosis. Improvised measuring devices, focused on a suspected weakness, may reveal hidden facts. Observing the pupil's habits of work, studying his mental activities as he describes how he is solving a selected problem, and noting his difficulties as he reacts to a carefully graduated scale of selected material, are often keenly diagnostic procedures.

8. The teacher is advised to remain open-minded about each case. Altho conclusions must be drawn early and remedial work based on them must be begun, the conclusions should remain tentative until the teacher is sure the correct remedial measures have been applied.

9. As the study of any pupil progresses, the pupil will inevitably grow. The conditions observed in him one day may not exist the next week or the next day. The teacher is advised to recognize and record this growth and to change her procedures if necessary.

10. When it seems wise because of physical or social conditions, the problem child is passed on to the next grade whether he has achieved the standards set for his grade or not. If he has been given a curriculum adapted to his needs and abilities and has succeeded in it, he has achieved all that should be expected of him. Differentiation of curriculums implies differentiation of promotional examinations. Each child is given an examination based on the curriculum he has pursued.

11. For some pupils it may be appropriate to change the grade placement of items in the general elementary-school curriculum. When once a pupil's curriculum is made, even tho it contains material usually assigned to a higher or lower grade than the one in which he meets it, or material not included in any other curriculum, the pupil is made to feel that he is developing his peculiar abilities and that success in *his* curriculum is just as respectable as success in any curriculum.

12. The forms on which a pupil's case is recorded are passed on from teacher to teacher as long as the information supplied therein is of value in educating the child properly. Each succeeding teacher, however, regards the child without prejudice, compares the data on the forms with the present status of the child, and continues the case with an open mind.

Record forms used—Case-study record booklets may be obtained from several publishers.[2] They are usually too complex and technical

[2] For example, see: Torgerson, T. L. *Case Study Record.* Madison, Wisconsin: University of Wisconsin.

for use by the classroom teacher. They are valuable chiefly for work with difficult cases that are being handled by supervisors or guidance officers.

Two different record forms are being developed by the writer and the teachers under his supervision. In their present form they have been in use only one year. Figure I shows the simpler of the two forms—the one used for the preliminary record of each pupil in the school. It is printed lengthwise on an 8½″ by 14″ sheet. All the data called for are about the pupil himself. Many of the pupils whose records are placed on this form are found to be readily adjustable to the general curriculum. The specific cases listed on the form reproduced here were selected from the records of several teachers.

Space does not permit inclusion here of the second form, which is used in further diagnosis and treatment of the more difficult cases. It is printed on the two sides of an 8½″ by 14″ sheet. Only item 12 in Form 1 is included also in Form 2. The latter calls for further information about the pupil, information about the subjectmatter, changes made in the curriculum to adapt it to the pupil's particular capacity, the results of the work done to help him, and critical comments that may help in subsequent work with the pupil. Provision is made for having the study continued by three teachers.

Criticism of the method—Teachers may object at first to the method just described, because they lack understanding of its purposes and specific procedures, and because it takes time from the usual class routine. Adequate instruction of teachers, with the aid of a manual and with illustrations of completed forms, such as that reproduced in this article, should help to remove the objections. Evaluating curriculums on the basis of individual needs and devising suitable instructional materials require much more intelligent thought than merely offering a general curriculum and either forcing pupils who do not succeed with it to repeat the same work, or letting them advance from grade to grade with barely passing marks. The former plan requires the abandonment of old, and the organization of new classroom methods—the devotion of less time and energy to ineffective group instruction, and more to effective individual instruction. Intelligent practise in using the method should in time produce master teachers who are capable of using it well. Since the method contains many of the simpler technics commonly practised by guidance experts and supervisory officers, the bare description of it may seem trite and inconsequential. It is designed, however, to give two tasks to the people most capable of discharging them. It makes the teachers responsible in a larger measure for both the appraisal and the building of curriculums.

FORM 1. DATA SHEET FOR ALL PROBLEM CASES (Preliminary Diagnosis Only)

Record information about all problem cases. Use as much space as necessary for each pupil.

1 Pupil, Subjects and Date	2 Observed Symptoms	3 C A I Q M A	4 Educational History	5 Skills in Tool Subjects and Pre-requisites	6 Observed General Maturity	7 Character Traits and Habitual Emotional Reactions	8 Physical well-being and Health Habits	9 Psycho-Physical Defects	10 Interests and Probable Aptitudes	11 Pertinent Social and Economic Facts	12 Type of Problem-- Preliminary Diagnosis
A.W. Math. 7th 1935-6 8th 1936-7	Didn't understand what it was all about	Kuhlmann-Anderson Oct, 1935 C.A. 13-5 I.Q. 90 M.A. 11-11	Rural to 4th in southern Illinois. Repeated 6th Work fair except math.	Low in skills and reasoning on standard arithmetic tests	Mature socially mentally physically	Not a good mixer Unemotional Industrious Cooperative Courteous	Fair general health Lacks vigor May be poorly nourished	Near sighted. Not a serious handicap	General reading Literature Language aptitude	Father was unemployed during depression. Factory hand now on low salary	Has not been properly taught in fundamental skills in arithmetic Lacks number sense
D.E. Reading 7th '32-34 8th 1934-5 9th 1935-6 10th 1936-7	Could call words orally but could not comprehend meanings	Dec., 1936 C.A. 17-6 Otis Group 9/12/33 I.Q. 91 Otis Self Ad 12/19/33 I.Q. 82	Rural to 7th grade Receives low grades Repeated 7th	Stanford 3/10/33 Score 66 Norm 89 Iowa Read Rate and comp only one half of norm	Socially and physically mature Mentally immature	Honest Dependable Industrious Not a quitter Energetic physically Sluggish mentally	Good health Fair habits Often up late at night Overworks physically	None	Outdoor and Competitive sports Science Machinery Agriculture	Family owns and works good farm Father is a leader Sister bright Works with father a lot on farm	Slow learner Not taught to read in rural school. Fair memory if given time Practical work in his line is good
M.B Reading Dec, 1936 Grade I	Failure to complete work Inattentive Irresponsible	Detroit Oct, 19, 1936 C.A. 6-4 I.Q. 88 M.A. 5-6	Entered Grade I Sept 8, 1936	Lacks experiences necessary for beginning reading Subnormal in social experiences	Physical maturity normal Social and mental maturity below normal	Irresponsibility	Inferior habits of cleanliness Lymph nodes swollen	None	Play with Toys Play with children	Socially and economically poor home Large family Parents do not play with or read to children	Lacks reading readiness because of lack of background of suitable experiences to comprehend content. Immature

FIGURE I—FACSIMILE OF FORM USED FOR ALL CASES

ILLUSTRATIVE CASE STUDIES

Informal essay reports on some of the pupils studied are made by the teachers. Since these illustrate the procedure employed, three of them are reviewed briefly here.

Case of W. B.—W. B. entered the first grade at the age of six years. He is the sixth of nine children in a family of extremely low social and economic circumstances. The mother is probably feeble-minded. The father is barely literate. Three older girls are inmates of the Lincoln School for Feebleminded Children at Lincoln, Illinois. W. B. kept his head in his arms on his table and would not speak during his entire first two weeks in school. He learned to play a little during his first year. He was retained a second year in the first grade but did not learn to read or write. His I. Q. was found by the Institute for Juvenile Research to be about 55. At the age of eight he was sent with two brothers to the Lincoln School and remained there two years. He returned to the second grade in our school at the age of ten. There he learned to recognize some first-grade words but could not read with comprehension. He has been promoted regularly and is now, at the age of fourteen, in the fifth grade. His I. Q. is probably below 75; his mental age is about nine years; and his educational age about eight years. His teacher believes he can be taught more effectively than he has been in the past. Most teachers believe such a child is hopeless and spend no effort on him. The teacher's verbatim report on this child follows:

Evidence of maladjustment: Slow in finding answers to questions in printed material. Reads word by word. Cannot find essential idea. Substitutes own thought for that in the paragraph. Poor spelling. Slow rate in silent reading. Insufficient vocabulary. Failure to make required progress.

Diagnosis: Inadequate training in phonetics. Timidity. Not enough practise in reading. No attention paid to content. Small meaning vocabulary. Has had no reading material to match his experience as reading incentive. Low general intelligence.

Remedial measures: Easy reading material to parallel his experience. Material within his grasp, with vocabulary to match his own. Individual drill in phonetics. Oral reading to the class when he is prepared to do it well. Oral talks on some subject in which he is interested, and on which he has information which the others do not have.

For word recognition and correct spelling I had W. B. first trace a word on the board while he sounded it slowly; he then spelled the word orally while writing it. He wrote it several times, then erased and wrote it again, spelling it correctly. In a list of words pronounced later, he spelled these words correctly.

I could not find material within his range of interest and experience that he could read; so I made simple stories for him, using the typewriter instead of script. I arranged short sentences instead of paragraphs, increasing the length of the sentences and repeating words that he had been misspelling or failing to recognize. He had called *horse,* "house"; *farm,* "from"; and *drives,* "dives." He now recognizes these words in any material.

Following is a sample of the stories used for W. B.:

"Willie lives on a little farm.

"He has horses and cows on his farm

"He likes to work with them.
"He has some little calves, too.
"Willie milks the cows and feeds the little calves.
"He drives the horses into the pasture to eat grass.
"Sometimes he drives the horses to town for his father.
"Would you like to ride with Willie in the wagon?"
Results: Some gain in academic skills. Much gain in self-confidence.

Case of A. W.—This case is reported on the sample form reproduced above. Altho her I. Q. was found to be 90 by the *Kuhlmann-Anderson Intelligence Test,* this child is probably of normal intelligence or above. Her case is reviewed here because she is a pupil who can do standard work in the general curriculum. The teacher's essay report follows:

A. W. entered the seventh grade in September 1935. She was a member of the seventh-grade arithmetic and history classes, and these were taught by the same teacher. She did passing work in the history class because she is a good reader, but she was unable to carry the arithmetic.

I soon found out she did not know the addition facts, subtraction facts, and the multiplication tables; nor could she work long division. We have drills using Courtis cards four days a week, so I let these drills take care of the addition and subtraction facts. She practised faithfully four days a week, and results followed.

I took A. W. out of the regular arithmetic work and we started learning the multiplication tables. These were learned and then we began work in long division. Our greatest difficulty was to find the number of times the dividend would contain the divisor, and to manage the remainder. Often the remainder would be so large that A. W. would make two or three divisions without bringing down another figure from the dividend. Long division causes her some trouble this year, but she is improving.

Next we studied fractions. Finding the least common denominator was very difficult, but after being helped to find it, she could add and subtract fractions, and, as I remember, we had little difficulty with multiplication and division of fractions.

This represents the work done in the school year 1935-36. I do not mean that this is thoroly mastered, but A. W. has come a long way. The time used during the year was the regular arithmetic period, and two extra hours each week, one on Wednesday and one on Friday. When A. W. saw the progress she was making, she came voluntarily in the mornings before school and stayed after school for help.

This year A. W. is a member of the class in arithmetic VIII. The class is studying percentage, but A. W. is unable to do all the work of the class. By working before and after school and during the class period, she has learned to change fractions to decimals and then to percents. She can also change the percents to decimals or fractions. She is able to solve a one-step problem, such as finding discount when the list price and rate of discount are given. This last week we have started a two-step problem. She can solve them if they are kept quite simple.

Case of D. E.—The report on D. E. is given here because he illustrates the type of case which gets into high school without mastering the elementary-school skills. The preliminary diagnosis of his case is given on the form in Figure I, p. 327. He is a sophomore in high school, and in spite of his deficiencies is making some progress. He is registered for English, world history, agriculture, and biology. The teachers are still working on his case in an effort to devise a more suitable curriculum for him. The reports of several of his teachers follow:

1. D. E. was a member of seventh-grade history class in 1932. We had begun the study of the settlement of the thirteen colonies, when I discovered his inability to get the content from reading the history text. D. E. was not a good reader, but he could pronounce most of the words of the text. These words meant nothing to him.

One day I selected the story of Rhode Island and asked D. E. to read the story silently and then to make a report. He could tell nothing. Then I asked him to read aloud to me and still he had no report to make. Next I read aloud to him and he seemed to get very little. It seemed to be too much for him to grasp a series of connected ideas; so we studied the story sentence by sentence.

Each week we spent one hour on Wednesday and one hour on Friday reading our history text or the *Current Events*. The latter proved to be the greatest help because it seemed to be a link between the history and present happenings, and D. E. perhaps saw a use for history.

2. In English D. E. was able to memorize some grammatical forms and to use them in simple constructive work, both oral and written. He worked on sentence structure and on brief descriptions and explanations of mechanical devices when other members of the class were writing the more literary type of composition. The literature of the class was read and explained to him; then he read particularly assigned parts himself.

3. In business training he memorized facts, filled in forms, and worked out practical problems. He did not do lengthy projects which required reading and following detailed directions. In simple projects he read and explained the directions to the instructor before he attempted to work out the exercises.

4. I have very little trouble with D. E. in agriculture and biology. Occasionally I ask him to read another reference on some subject he does not understand. I try to bring out all the important points in a lesson during the discussion period. I believe this method helps with him.

SUMMARY

This article has not been concerned with evaluation of the curriculum *in general*. It has described, rather, a method of appraising the curriculum in the light of individual pupil abilities and needs. Such appraisal is based on the assumption that each pupil should have his own distinctive curriculum so far as his needs are different from those of his fellows.

In applying the method, the attention of teachers and supervisors is focused first upon the individual child, and second upon course-of-study content and methods of teaching. The procedure is essentially that of the case study, beginning with the relatively simple analysis and treatment of every pupil's needs, and following with a more exhaustive diagnosis and treatment of serious maladjustments. In the process of remedial treatment, emphasis is placed on readjusting the curriculum to the child.

From the point of view presented here, we should make as many appraisals of the curriculum as there are pupils in the school. Moreover, each appraisal must be carried on continuously if the best results are to be obtained. This is a difficult and time-consuming task, requiring teachers who have patience, understanding, and skill. The writer has, however, found it both practicable and decidedly worthwhile in the school system of which he has charge.

A PROGRAM FOR EVALUATION OF CURRICULUM CONTENT

DOUGLAS E. LAWSON

Assistant Principal, Brush Training School, Southern Illinois State Normal University, Carbondale, Illinois

THE PROGRAM of content evaluation in the Brush Training School of Southern Illinois Normal University began with a suggestion from the president that each department prepare a report on its contributions to the major objectives of education. The training school, after making its report, decided to extend its self-survey to include a complete inquiry into the nature and adequacy of its curriculum content. This article reports briefly the steps that were followed thruout the survey.[1]

Appraising general aims and contributions—In determining the contribution of the curriculum to accepted educational objectives, three supervisors of the training school acted as a central committee to draft a final statement after the other supervisors and teachers had presented written reports concerning their own departments or subjects. The order of procedure in this part of the survey was as follows:

1. All supervisors and teachers met and discussed the aims of education in the light of authoritative opinion, recent research, and present knowledge.
2. The supervisors and teachers met again to discuss the work of the training school and its apparent contributions.
3. A committee of three supervisors was selected to make a final report on the contributions; other supervisors and teachers were invited to prepare written reports of the aims and contributions of their own work, and to submit these reports to the committee.
4. The committee met for the purpose of determining, from the data in hand, just which aims of education were actually furthered by the Brush School.
5. The committee drew up a tentative, three-thousand-word report summarizing the apparent contributions of the school under four main heads.

The unique outcome of this part of the survey was the fact that it resulted, not in lengthy and unsupported claims, but in a concise grouping of the school's present contributions into only four out of at least seven large fields. For this purpose, reference was made to the so-called "seven cardinal principles" [2] of education as being roughly indicative of the major contributions which schools should make to

[1] Credit for the survey here reported belongs to W. G. Cisne, superintendent, and the following supervisors and teachers: Elnora Baumgardner, Dora Bevis, Mabel Eads, Mae Fox, Verna Gent, Dora Gilbert, Tina Goodwin, Irene B. Hodge, Betty W. Jones, Mabel P. McGowan, Maude Mayhew, Jewell Trulove, Grace Wilhelm, and Marjory B. Wintersteen.

[2] U. S. Department of the Interior, Bureau of Education. *Cardinal Principles of Secondary Education.* Bulletin, 1918, No. 35. Washington, D. C.: Government Printing Office, 1918. 32 p.

society.[3] However, instead of claiming contributions to each of these fields, the report of the committee frankly stated:

> While the general aim of the Brush Training School program comprehends the complete development of the individual to the end that he may function ultimately as a highly efficient member of society, it must be recognized that the immediate program of teacher preparation specializes its functions, including three of the large objectives of education only in the sense that they are recognized and promoted at this school as concomitant outcomes. . . .[4]

Thus, waiving claims to the attainment of other possible objectives, the report stated that the contributions of the school could be classified as dealing with (1) vocational efficiency, (2) esthetic and moral efficiency, (3) command of the fundamental tools, and (4) civic efficiency. The committee agreed that too often schools and school people make claims whose foundations are so nebulous as to be little more than hypothetical. It seemed to the committee that to perform a worthwhile service, it must make claims which were clearly to be substantiated by the plain evidence of results. Hence, it refused to report that the school contributed to those objectives not measurably promoted in purposeful and direct ways, namely, health, worthy home membership, and worthy use of leisure.

Outline of procedures for evaluating specific content—After the central committee had made its report, an outline of procedures for actually surveying the detailed content of all major courses was made and presented to the supervisors. Because this outline was accepted and followed in the subsequent work of the staff, it is here reproduced in full:

I. Statement of Aim:
The aim of this investigation is strictly that of evaluating *the content* of the present curriculum.

II. Basis for Evaluation:
The basis for determining the relative worth of any part of the content will be twofold:

A. In each departmental course, the supervisor, with the aid of the superintendent, will compare the content material with other courses of study and with suggested courses published by curriculum commissions and committees.

B. The supervisor will then make a critical examination of the course of study as used at present, such analysis to be made in the light of the recently determined criteria for curriculum material in the elementary school as stated in the report entitled *Contribution of the Brush Training School to the Major Objectives of Education.*

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[3] For other statements of elementary-school objectives, the reader should consult the article by Powers in Chapter I, and the article by Wrightstone in Chapter VII.—*Editorial Committee.*

[4] *Contribution of the Brush Training School to the Major Objectives of Education.* (Mimeographed) March 1936. p. 1.

III. Procedure to be Used:
The procedure will divide itself into two major programs of work:

A. The first program will consist of an actual writing of the course of study, as used, by each departmental supervisor and each teacher.
   1. The courses will be written non-critically, being merely a factual presentation of the course materials for each offering made.
   2. The second step in the first major program will be the critical analysis of each course of study by the supervisor concerned. The analysis will consist of brief, separate treatment of each part of the course of study, and will present two specific sets of material: (1) a justification of each part of the course, such justification to be based upon the comparison that has been made (Cf. II, B, above); (2) an explanation showing why specific deviations have been made from such courses of study as may appear to have been more widely adopted.

B. The second program of work will be conducted by joint group meetings of the supervisors from all departments. At each of these meetings, a supervisor will present to the group a copy of the general course of study for his or her department (Cf. III, A, 1). The supervisor will present to the group also a copy of (1) his own critical analysis of his course of study, and (2) the explanatory statements concerning specific deviations in the course from more widely adopted courses of study (Cf. III, A, 2), and (3) his suggestions for changes in his course.

   With these materials in hand, and in the light of the criteria as previously mentioned in the report, *Contribution of the Brush Training School to the Major Objectives of Education,* the group of supervisors will discuss critically the program of studies as presented by the supervisor in charge. (It is assumed that such a critical examination will result in definite changes in a course of study where such changes, in the light of the stated objectives, appear to the group of supervisors to be desirable, and where a contrary opinion by the supervisor in charge cannot be sustained.)

Teachers' reports on course-of-study content—In preparing to follow the procedures just outlined, a letter was addressed to each teacher, suggesting that the first essential step would be to make a skeletal outline of her course of study. The letter asked that devices and methods be entirely omitted from the reports and that brief, clear statements be made of the material being taught in the year's work. It was suggested that these preliminary reports be completed within three weeks.

The reports received varied in style more than had been anticipated. As a rule, however, they were concise and complete. Two samples follow, the report on arithmetic in one of the third-grade divisions, and that on reading and language in Grade V:

REPORT ON CONTENT OF ARITHMETIC IN GRADE III

1. Review of second-grade work
2. Addition drill of 100 combinations; long single-column addition
3. Two-column addition
4. Addition by endings
5. Subtraction drill of 100 combinations
6. Subtraction of three-place numbers
7. Multiplication tables thru 6's

8. Division—short division to three-place numbers
9. Examples introducing fractions
10. Liquid and linear measures
11. United States money
12. Telling time
13. Roman numerals to XX
14. Thought problems

REPORT ON CONTENT OF READING AND LANGUAGE IN GRADE V

1. Magic messages
   a. To develop interest in sending messages, problems of communication by wire, wireless, radio, telegraph
   b. To stimulate pupils to spontaneous expression
   c. Read for information and answer questions
   d. Copying for absolute accuracy
   e. To find main thought in a paragraph so they may use it in their own paragraphs
   f. To say much in few words
   g. Capitals, commas, paragraphing in conversation
   h. Verbs introduced: *drive* and *blow*
   i. Strengthen sentence sense
   j. Learn to appraise own work
   k. Develop group work and initiative in planning a program
2. Messages by mail
   a. To develop interest in travel by railroad and steamship
   b. To develop letter writing—sending messages by mail
   c. Read and write statements of the main point of each paragraph
   d. Dictionary study
   e. Telling a real experience
   f. Verb forms: *fly* and *rise*
   g. Cheerfulness and informality of a letter studied
   h. A good opening sentence
   i. Judging a letter
   j. Writing letters
3. Yesterday and today on the farm
   a. Inventions on the farm
   b. Writing sentences by contrasting content with samples given
   c. Simple plan or outline for a story to be written
   d. To emphasize the importance of successive steps in an explanation
   e. Directed group discussion
   f. Verbs: *draw* and *speak*
4. Among the world's workers
5. Nature's gifts
6. The home circle
7. School and school life
8. America for me.

Results of the survey—It cannot be stated that this study resulted in wide curriculum changes. However, the purpose of any survey, from the administrative viewpoint, is to acquaint teachers with the work of their own institution as well as to discover and make needed changes. Without doubt, changes other than those immediately resulting from the survey will be made eventually. Teachers plan to continue their

efforts toward better integration, gradual improvement thru revisions, and repeated analysis of changing needs.

In summary, it should be noted that this survey approached the problem of content evaluation thru two chief channels: (1) critical study of the objectives of education and a check of the work of the school to determine its contribution to those objectives; and (2) a carefully-planned program of analysis in which each teacher outlined her year's work and defended it before the critical appraisal of all other teachers in the institution.

No prejudiced views were entertained before the study was begun. At those points where it resulted in no changes, the teachers may feel strengthened by the satisfaction that their work already merits approval. Where changes did result, they came about thru self-motivated and cooperative effort rather than thru administrative command.

ONE of the greatest difficulties with American education is that most of the energy which is paid for and regularly employed in school work is absorbed in conducting the operations of the classroom. Certainly, no one can deny that class instruction must be promptly and properly attended to. But so long as this immediate necessity is allowed to monopolize the time of school officers, there is sure to be a neglect of fundamental research. Teachers seize upon materials of instruction that come readily to hand. Some of this material has, in the course of long trial, been refined until it is satisfactory. The refining of the curriculum by a crude process of trial and error is, however, wasteful as is blind experimentation in any line. When changes come in rapid succession as they have been coming in recent years, the time necessary for selection of material through trial and error cannot be secured and experiments often prove to be disastrously unsuccessful.—Judd, Charles H., in *Journal of Educational Research,* May 1928, p. 321.

SCHOOL SUBJECTS PREFERRED BY CHILDREN

ETHEL E. HOLMES

Principal, Wyman School, Denver, Colorado

IN THE SPRING of 1932, in connection with its study of the activity movement, the faculty of Wyman School raised some significant questions as to the stability of the likes and dislikes of the typical elementary-school pupil. The desire for information on this point led to a survey of children's preferences among the various school subjects over a period of years. In describing this survey, the writer does not pretend that it represented an adequate appraisal of the curriculum, or that it yielded conclusions which are applicable to elementary schools in general. Other schools might obtain quite different results. The survey helped, however, to reveal certain conditions in the Wyman School, and the procedure used may be useful to other principals and teachers in evaluating their own curricular programs.

Obtaining responses from pupils—To discover which subjects the children preferred, a brief questionnaire was presented to them once each semester for seven consecutive semesters. During an English period near the end of each semester, the pupils were asked to answer briefly these two questions: (1) What subject do you like best? Why? (2) What subject do you like least? Why? The second question was originally phrased to read, "What subject do you dislike most?," but so many pupils evaded it by stating, "I don't dislike any subject," that it was necessary to change the wording.

No formality was attached to the writing of responses; there was no discussion of what would be done with the results. Nor was any special curiosity ever shown by the pupils; they probably thought of the task as another one of those inexplicable assignments that occur every so often even in a near-progressive school. The teachers agreed not to give the pupils any suggestions whatever. Moreover, because the teachers wished to maintain a wholly impersonal attitude toward the project, no tabulation of the responses was presented to them until after the close of the study.

For the first four semesters we tabulated only the answers of pupils who were present when the study began, thinking that only the *continuity* of choices would be significant. As we became increasingly aware of the extent to which this information could be applied in our work, the scope of the study was enlarged. During the last three semesters, all pupils who were present when the questionnaire was given were asked to answer it. However, only pupils who had answered the questionnaire at least twice were included in the tabulations. The

results presented here are based on 808 replies to the questionnaire by a total of 186 pupils. The number of replies from each grade is shown in the bottom row of Table 1.

Subjects liked best—Table 1 also shows by grades the number of pupils liking each subject best, and the rank of each subject according to the number of first choices it received. Of the ten subjects listed, arithmetic holds a surprising lead, even when one understands today's painstaking analysis of steps in a process and the thoro preparation of the teacher. Certainly, as far as our study is concerned, this subject has no near competitor. It holds first place among the subjects liked best in every grade. Art, which has a rank of 2 in all grades combined, ranks second or third from Grade III-A to Grade VI-A, but drops to seventh place in III-B, a spot in which art should be highly pleasurable because it grows largely out of the study of Indians. The number of choices in II-A is too small to be very significant, but here too art drops, achieving only fourth place.

Reading holds third place in the composite ranking, fourth in Grade VI-A, and second or third in every other grade except III-B, where it drops to sixth place. This is the grade in which pupils begin to emerge from the mechanics of reading, and perhaps the subject seems more difficult at this time than it has hitherto. Art and reading are liked almost equally well, being separated in the composite rank by only ten choices. There is, however, a sharp drop of 51 votes from art in third place to physical education in fourth place.

Physical education, spelling, and social science hold fourth, fifth, and sixth places, respectively, in the composite ranking, but are separated from one another by only a few votes. Physical education holds fourth place in three grades, fifth place in two, sixth place in one, and seventh place in one. It rises to third place in Grade III-B, where the children are given their first formal experience in this field. Spelling ranks from second to eighth, decreasing in standing in the upper grades. Social science is more consistently placed, holding a rank from 3 to 6 thruout the grades.

Our treatment of social science had led us to expect that it would be placed higher on the list of subjects liked best. The social studies in Grade III-A (Children of Foreign Lands), and in VI-A (The Countries of South America, Panama, and Mexico), are particularly interesting, and in these grades the subject is placed third. In V-A the social science course repeats to a certain degree the work of V-B, and here the subject drops to sixth place. The reasons given for disliking this subject were so scattered that the children's efforts to rationalize were apparent, altho "not enough books" or "books are old" appeared several times. Whatever may be the reason, the low place of social studies among the

TABLE 1—SUBJECTS LIKED BEST BY PUPILS IN EACH GRADE

SUBJECT	FIRST CHOICES IN GRADE:																			
	VI-A		VI-B		V-A		V-B		IV-A		IV-B		III-A		III-B		II-A		ALL GRADES	
	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Arithmetic	27	1	38	1	44	1	58	1	44	1	43	1	22	1	20	1	11	1	307	1
Art	17	2	14	3	25	3	24	2	25	2	9	3	9	2	1	7.5	3	4	127	2
Reading	8	4	19	2	26	2	17	3	23	3	10	2	7	4	3	5.5	4	3	117	3
Physical education	6	6	10	4	13	4	16	4	8	5	3	7	6	5.5	4	3.5	..	[a]	66	4
Spelling	4	7.5	3	8	4	7	9	6	15	4	8	4	6	5.5	7	2	6	2	62	5
Social science	9	3	9	5	6	6	13	5	3	6.5	6	5	8	3	4	3.5	1	6	59	6
Music	7	5	6	6.5	11	5	3	7	3	6.5	4	6	5	7	3	5.5	2	5	44	7
Penmanship	4	7.5	6	6.5	1	9.5	1	9.5	..	[a]	1	9	2	8	..	[a]	..	[a]	15	8
Language	..	[a]	..	[a]	2	8	2	8	..	[a]	2	8	1	9.5	1	7.5	..	[a]	8	9
Elementary science	..	[a]	..	[a]	1	9.5	1	9.5	..	[a]	..	[a]	1	9.5	..	[a]	..	[a]	3	10
Total	82	...	105	...	133	...	144	...	121	...	86	...	67	...	43	...	27	...	808	...

Read table: Among the subjects liked *best*, arithmetic ranked first in every grade, with 27 choices in Grade VI-A, 38 choices in Grade VI-B, 44 choices in Grade V-A, etc. Art ranked second in Grade VI-A with 17 choices, third in Grade VI-B with 14 choices, third in Grade V-A with 25 choices, etc. Similarly read figures for the other subjects listed in column 1.

[a] No rank given because the subject received no choices in this grade.

subjects liked best, and its high place among the subjects liked least give us something to think about.

Music is fifth, sixth, or seventh among the subjects liked best in the various grades, holding a rank of 7 in all grades combined. This subject is second among those liked least (see Table 2), which seems to indicate an active antagonism toward it. Since many of the children's comments were based on inability to read notes or to interpret keys, we challenged both our own teaching and the heavy assignment required. Certainly the music period should be a joyous experience for the average child.

Penmanship is eighth in the composite ranking. It is not liked best by any of the children in Grades II-A, III-B, or IV-A, and holds from sixth to ninth place in the other grades. Its standing improves slightly in the upper grades.

That language was placed so low in the list was an occasion for grief among the teachers. It is ignored among the subjects liked best in Grades II-A, IV-A, VI-B, and VI-A, and received only eight of the 808 choices in all grades. It also ranks low among the subjects liked least, indicating an attitude of indifference on the part of the children. The teachers feel that this situation is due to the pupils' failure to consider all oral and written expression as a phase of "language," and their consequent association of this term with drill periods only. After discussion we decided to feature English under its proper name, to make the class periods an occasion for delight, and to say frequently after lessons which are frankly enjoyed by the children, "This is *English*!" No pupil can afford to approach the continuous study of an important subject with so disastrous a mind-set.

The only subject toward which the pupils seem more indifferent than toward language is elementary science. It ranked lowest both among the subjects liked best and among those liked least.

Subjects liked least—Reference has already been made to some of the subjects liked least. Table 2 shows the children's responses on this question in detail, giving the number of times each subject was chosen and the corresponding rank by grades. The choices here were more evenly distributed among the subjects and more persistent from grade to grade than in the case of the subjects liked best.

As mentioned above, the subject receiving the most negative votes (140 in all grades combined) is social science. It holds first or second place in every grade except II-A, III-B, and III-A. Music, in second place for the school as a whole, ranks lowest in Grade V-A and IV-B, where it holds fourth place. Spelling, arithmetic, and penmanship are third, fourth, and fifth in the composite ranking, but are quite inconsistent from grade to grade.

TABLE 2—SUBJECTS LIKED LEAST BY PUPILS IN EACH GRADE

SUBJECT	FIRST CHOICES IN GRADE: VI-A		VI-B		V-A		V-B		IV-A		IV-B		III-A		III-B		II-A		ALL GRADES	
	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank	Number	Rank
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Social science	16	1	30	1	30	1	23	1	18	2	14	1	5	6	4	4	..	[a]	140	1
Music	14	2	16	2	13	4.5	21	2	29	1	12	4	12	1.5	8	1.5	8	1	133	2
Spelling	13	3	13	3	13	4.5	13	5	13	3.5	12	4	7	4	8	1.5	2	5.5	94	3
Arithmetic	9	5	12	4	16	2	15	4	13	3.5	8	6	11	3	3	6	5	3	92	4
Penmanship	11	4	6	6.5	11	7	20	3	4	9	5	7	12	1.5	7	3	6	2	82	5
Art	6	6	6	6.5	7	8.5	12	6.5	12	5	13	2	6	5	3	6	..	[a]	65	6
Reading	5	7	5	8	12	6	6	10	10	6.5	12	4	4	7	3	6	2	5.5	59	7
Language	4	8	7	5	14	3	12	6.5	8	8	3	8.5	2	9	1	9.5	4	4	55	8
Physical education	1	10	2	9.5	2	10	7	8.5	10	6.5	3	8.5	..	[a]	2	8	..	[a]	27	9
Elementary science	2	9	2	9.5	7	8.5	7	8.5	..	[a]	1	10	3	8	1	9.5	..	[a]	23	10
No choice	1	...	6	...	8	...	8	...	4	...	3	...	5	...	3	...	..	...	38	...
Total	82	...	105	...	133	...	144	...	121	...	86	...	67	...	43	...	27	...	808	...

Read table: Among the subjects liked *least*, social science ranked first in Grade VI-A with 16 choices, first in Grade VI-B with 30 choices, first in Grade V-A with 30 choices, etc. Similarly read figures for the other subjects listed in column 1.

[a] No rank given because the subject received no choices in this grade.

Art and reading again emerge as favorite subjects; they are sixth and seventh among the subjects liked least. Physical education is apparently disliked by very few children, and the same is true of language and elementary science. The latter received only 23 of 808 choices as the least liked subject in the list.

Combining favorable and unfavorable votes for each subject—Since every subject was liked best by some pupils and liked least by others, it was necessary to combine the two types of votes in order to see their real significance. This was done by subtracting the number of times a subject was reported as "liked least," from the number of times it was reported as "liked best." When the former number was larger than the latter, the difference between them was given a minus sign. The results of this computation for all grades combined are as follows:

	Liked best	*Liked least*	*Difference*
Arithmetic	307	92	215
Art	127	65	62
Social science	59	140	—81
Language	8	55	—47
Reading	117	59	58
Spelling	62	94	—32
Penmanship	15	82	—67
Elementary science	3	23	—20
Music	44	133	—89
Physical education	66	27	39

From these figures it is clear that arithmetic, art, reading, and physical education were the only subjects liked best more often than they were liked least. All the others received more negative than positive votes.

Children's reasons for their choices—We have been much more interested in children's reasons for liking or not liking a subject than in the choices themselves. Following is the outline of reasons used in tabulating the responses, together with the percent of all responses classified under each major heading:

REASONS FOR LIKING SUBJECTS BEST

I. Power (43 percent)
   A. I can do it. It's fun.
   B. I get good grades.
   C. I can do it better now than I used to.

II. Desirable subjectmatter (43 percent)
   A. I like this study. It is interesting.
   B. I enjoy the specific thing that the subject brings: working with tools, clay, or color; multiplication, fractions, keeping score, running, writing notes, learning to write a story, variety of opportunities, creating.
   C. Best by comparison. (I like it better than any other.)

III. Value (14 percent)
   A. It is valuable to me now.
   B. It will be valuable later.
   C. It strengthens my character.

REASONS FOR LIKING SUBJECTS LEAST

I. Lack of power (49 percent)
  A. I can't do it well.
    1. I don't understand some specific thing, such as reading notes, division of fractions, etc.
  B. I get poor grades.
  C. The work is too hard. (Note the difference in the attitudes of pupils who give *A* and *C* as reasons for liking a subject least.)

II. Subjectmatter shortage (33 percent)
  A. I am not interested in this subject.
  B. I don't enjoy the specific thing we have to do in this subject.
  C. The subject is too indefinite.
  D. It is monotonous.
  E. It takes too long. I can never finish the lesson.
  F. I can get it somewhere else (at home).
  G. No reason given.

III. No value (2 percent)

IV. Method unsatisfactory (9 percent)
  A. I don't like drill.
  B. We have to write too much. I don't like to write.
  C. I don't like the way we do it (specific method).
  D. There are too many questions.
  E. Too much memorizing.

V. I like this subject less than others (2 percent).

VI. I dislike none (5 percent).

The subheadings in these outlines represent the actual answers of most pupils. A few responses, however, were not covered adequately by any of the headings listed. Such unusual answers as "I like arithmetic because Miss ..... makes it interesting," and "I like art because I can draw the things out of my own head," were perforce classified under the same headings as "The subject itself interests me," and "I like the things we do in this subject." In tabulating the replies, it was impossible to take account of the fact that one pupil may be keenly responsive to the part played by the teacher, while another pupil is strongly creative and less dependent upon the teacher.

Of the 808 reasons given for liking subjects best, 86 percent were based either on a sense of power or on an interest in the subjectmatter itself, while only 14 percent emphasized the *value* of the subject. Of the 808 reasons for liking subjects least, 82 percent were centered either in a lack of power or in a lack of interesting subjectmatter, while only 2 percent stated that the subject had no value. These facts indicate that the children in this school are not much concerned about the values of various subjects, but are influenced strongly by the nature of subjectmatter and by the degree of successful achievement which they are able to attain. This information should help us to increase the popularity of subjects which are now in disrepute.

It is gratifying that only 4 percent of the responses mentioned good grades as the reason for liking a subject best, and only 3 percent listed

poor grades as the reason for liking a subject least. It is also encouraging to note that among pupils who had difficulty with their work, the number who said, "I can't do it well," was nearly twice as large as the number who said, "The work is too hard." On the other hand, one cannot help being concerned about a situation in which 67 pupils say they don't like music because they "can't sing," and in which 40 pupils reject the subject of art because they "can't do it well." Aren't elementary-school children a little young to be assuming that any avenue of activity is entirely closed to them?

Several different criticisms of teaching methods were received, but the only one of outstanding frequency was, "I don't like the way we do it." Apparently most of these children do not realize the significance of method; yet this phase of instruction is undoubtedly responsible for many of the difficulties and dislikes of pupils in the school.

Stability of children's interests—One of the questions we raised was whether there was any permanency of pupils' likes and dislikes, or whether their interests were wholly variable from year to year. In measuring this factor, one point was allowed for each choice that remained constant thruout all of a pupil's responses; that is, a subject received one point if a pupil selected it twice out of two choices, three times out of three choices, four times out of four choices, and so forth. Anything less than complete stability was expressed fractionally; for example, a subject chosen twice out of three choices received two-thirds of a point, while a subject chosen only once or not at all received no points.

By this method of measurement, arithmetic was by far the most stable among the subjects liked best, receiving about twice as many points as its nearest rival, art, and about two and one-half times as many as reading, which ranked third. The most unstable subjects were language, penmanship, and elementary science, none of which was chosen by any pupil more than once during the study.

Among the subjects liked least, none was chosen with outstanding consistency year after year. Music was the most stable, with social science, spelling, and arithmetic following closely. The most unstable were elementary science, physical education, and language.

Individual responses—A study of the responses of individual pupils has amply repaid teacher effort. Here, for example, is a child who for six semesters has said, "I like art least because I can't do well in it." There is surely an obligation on somebody's part to dissipate this attitude, particularly as teachers report that this pupil does very well in art.

Physical difficulties also become apparent in such replies as these: "I have a headache whenever I read." "I always get out of breath

during physical education." "I always have a nose bleed." "I don't like to recite orally because I have a split tongue."

Several children betrayed the childish love of routine when they said, "I don't like elementary science because we don't have it often enough." One naive answer came from a small maid who disliked social science because she was not a very "geographical person."

A rather dreadful arraignment of one teacher's method was made by the boy who said, "I don't like reading because we have to write so much." Another child little knew how great an indictment of the school lay in his statement, "I like arithmetic because *my father* makes it like a game."

With true missionary spirit we wish all pupils could reply as did one, "The subject I like most is all of them."

Conclusion—As stated at the beginning, this study proves nothing about the subject likes and dislikes of school children in general. The results of such a study are of value only to the individual school concerned. Differences in methods of teaching, in the abilities and personalities of teachers, in the amount of time devoted to the various subjects, and in the mental abilities of pupils undoubtedly exert an influence upon the preferences which pupils express. To determine the specific contribution of each of these factors will require further study. However, as a first step in appraising the curriculum in practise, and as a means of inspiring teachers to examine their work still more critically, the procedure described above has been found very useful.

It is not to be expected, of course, that all pupils will learn to like all subjects equally well. Nevertheless, there is value in concentrating the school's effort, for a time, on the subjects they like least, especially if these are generally recognized as among the most important by educational leaders. Children are not likely to profit greatly from school activities in which they are not interested, or which they actively dislike.

APPRAISAL AND REVISION OF A SOCIAL STUDIES CURRICULUM

HELEN K. MACKINTOSH [1]

Associate Professor of English, Miami University, Oxford, Ohio

THE SOCIAL STUDIES CURRICULUM for the later elementary grades in Grand Rapids, Michigan, has evolved during a period of years. In its first published form it appeared in 1928 as separate mimeographed bulletins in geography, history, civics, and practical arts. Altho issued separately, all these courses had a common starting point in the general aims of education. Each course had its own specific aims, but all courses had somewhat similar sections on methods, materials, and bibliography. Each one emphasized child activities as important for learning.

Early progress in integrating the social studies—The teachers used these courses until they had developed a feeling for the contributions of each—geography, history, civics, and practical arts. They suggested additions and subtractions of content, and recommended the activities that had been found most successful. The goal toward which superintendent and supervisors were working was a unified course in the social studies for the later elementary grades. A revision of the original courses in the four separate fields appeared in 1932. This revision was a unified course, altho the units presented were recognizable as essentially geography, history, or civics. The practical arts content was inserted largely in the form of activities related to the subjectmatter units. These units were of the conventional type, with such titles as "How the Pioneers Lived," "Earning One's Living in Michigan," "The British Commonwealth of Nations," and "School Costs." There were also some optional units in practical arts, such as "Dishes Americans Use" and "Modern Communication." The teachers welcomed these units as a means of eliminating separate periods and the resultant overlapping in the several social studies fields.

But by 1934 the teachers had grown in their thinking about social problems and in their ability to look at a course of study from a broad rather than from a narrow viewpoint. They felt the need for content that would touch the lives of girls and boys, that would avoid overlapping, and that would represent some continuity of thinking from the kindergarten thru Grade VI.

Criteria for further revision—The yardstick which the teachers used in appraising the course in social studies was subjective rather than objective. They felt that the citizens of the community did not fully

[1] Formerly Supervisor, Later Elementary Grades, Grand Rapids, Michigan.

appreciate their schools. They believed that the only way by which a different attitude could be built was to educate the next generation in terms of community problems, with less emphasis than in the past upon content that is far removed from the actual experiences of children. It seemed to these teachers that if children knew where tax money comes from; how it is spent; how schools get funds; what industries are important to the community; what part the average individual, whether child or adult, plays in the promotion of safety; what the transportation needs and problems of a city are; what persons have been the leaders in community enterprises; what the cultural centers of city life are; how a city is governed; and other similar topics —they (the children) would be more intelligent citizens.

The teachers were aware that some children engaged in no recreational activities; that many came from families who were on relief; that others had diseased tonsils and bad eyes; and that there were children in every school building who needed more and better foods. All these situations led thinking teachers to believe that schools should be more concerned with present problems than with past history.

A two-year cooperative program—As a result of this conviction, a group known as the "conference group on social studies" planned a cooperative two-year program. The first step was that of orienting members of the group with respect to community problems. A panel discussion was used to bring the issues involved out into the open. Several teachers, a parent, and a business man were included as members of the panel. The conclusion drawn from this discussion was that small committees should study the educational, industrial, civic, and recreational agencies of the city.

As a background for this study, teachers became familiar with the aims and purposes of the Virginia course of study.[2] They read recent magazines with articles on the problem. They familiarized themselves with the revised course in social studies for the kindergarten and first grade in their own city. They called in an industrial leader to discuss community problems with the large group. In a similar way they called in the city director of social agencies and a man interested in the field of religious education. They tried to get the opinions of these people with regard to what the schools were doing and ought to do. Committees of teachers obtained informal interviews with the director of the art gallery and with the head of the Y. M. C. A. They visited a cooperative exchange where no cash was used, but where many men earned a living. They made similar visits to other interesting centers in the community.

[2] Virginia State Board of Education. *Tentative Course of Study for Virginia Elementary Schools: Grade I-VII.* Bulletin, Vol. 17, No. 1. Richmond: the Board, 1934. 560 p.

Questionnaires answered by children—In addition, a number of teachers used questionnaires with their children to discover facts concerning the children's health, problems discussed in the home, children's recreations, and the like. The results from one such questionnaire are presented here:

SURVEY OF CHILDREN'S INTERESTS IN THE COMMUNITY

1. Did you go to any of the following places over the week-end? (Number answering "Yes")

	Grades			
	IV	*V*	*VI*	*Total*
a. Library	16	6	28	50
b. Museum	6	8	10	24
c. Park	3	8	10	21
d. Movies	17	23	25	65
e. Sunday school	17	23	39	79
f. Art gallery	1	3	4	8

2. Did you listen to the radio? Do you have a favorite program? Did you learn anything new?

a. Number that listened	21	12	12	45
b. Number of favorite programs	8	9	12	29
(1) Eddie Cantor	14	7	7	28
(2) Joe Penner	8	0	2	10
(3) Lone Ranger	7	8	3	18
c. Number of things learned	3	12	15	30

3. What thing in the neighborhood would you miss most if it were taken away?

a. Library	6	4	8	18
b. Movies	5	7	3	15
c. Museum	4	1	0	5
d. Trees	3	6	1	10
e. Playground	3	3	3	9
f. Park	1	2	3	6

4. Do you know of any problems your father and mother are thinking about?

a. Repairing	4	3	6	13
b. Moving	2	0	2	4
c. Budgets	7	19	14	40
d. Jobs	8	4	6	18
e. Clothes	2	8	2	12
f. Taxes	3	1	7	11
g. Education	0	3	2	5

The conclusions reported by the teacher making this survey were as follows:

1. Unemployment is a real problem.
2. Most families in this neighborhood are operating on reduced budgets.
3. People in this community who are not already on relief have difficulty in paying taxes.
4. Parents want a good education for their children.
5. Interest in the art gallery needs stimulating.
6. There is a movie problem in this district.
7. Most children listen to the radio just for fun.
8. Places for active play are popular.
9. Greater emphasis should be given in the school program to the work of the library.

Summarizing pertinent information—The results of all these studies were pooled as informal reports to the conference group on social studies, and were then reported at a summary meeting to all teachers of the later elementary grades. A permanent file of source materials was built, to which any teacher had access. Summary sheets such as the following were distributed to all teachers of the grades concerned and to others interested:

SOCIAL STUDIES SUMMARY

Do You Know:

1. That thru the work of the Anti-Tuberculosis Society our death rate has been reduced from 125 to 31.7 per 100,000 of population?
2. That the Humane Society picks up an average of 250 cats a month and 2500 dogs a year?
3. Why there is a 345-foot well under the Civic Auditorium?
4. That a record for comparative purposes is kept of all school supplies used within each building of the city schools?
5. That there is a movement among the students in some church schools of Grand Rapids "to take a stand against demoralizing types of literature and motion pictures, and to consider a moral code for social life"?
6. That about one out of every thirty people in Grand Rapids (one-half the number being children) makes a regular monthly visit to the Art Gallery, while in other cities about one out of every eight or ten attends regularly?
7. That the Grand Rapids Art Gallery receives no financial support from the city, while most other cities the size of Grand Rapids either partially or fully finance their art galleries?
8. That about 700 wandering boys are cared for each year by the Grand Rapids Y.M.C.A.?
9. That the Herold-Bertsch Shoe Company began in Grand Rapids because Alonzo Herold and Christian Bertsch saw a market for loggers' boots in the early days?
10. That the Edgar S. Kiefer Tanning Company began here because in the early days Grand Rapids was a good location as a wool pullery?
11. That Grand Rapids has the largest of all carpet-sweeper, school-seat, window-sash-pulley, excelsior, sticky-fly-paper, show-case, and refrigerator factories in the world?

Organizing and evaluating material—Plans were made to continue the conference group on social studies for a second year for the purpose of actually building units of material in terms of its findings. In the fall of 1935 the original group, with some additions, met as a committee of the whole—forty in number—to develop units cooperatively. First the group as a whole went thru the steps of organizing a unit of work in the light of their reading, discussion, investigation, and thinking of the previous year. Themes were developed, generalizations made, content suggested, activities pooled, and desirable outcomes stated. The group set up the following simple standards for guidance:

1. Make all statements simple enough for the "man on the street" to understand.
2. Keep generalizations few and to the point.
3. List type activities that can apply to many situations. (Too many detailed activities are confusing.)

4. Avoid overlapping outcomes. State outcomes in terms of children; avoid generalities.

After the large-group experience with developing a unit was concluded, groups of four or five teachers worked together to develop units. Each of these groups presented its material to the larger group for criticism. The standards indicated above were applied in evaluating the material presented.

As yet the results of this project are available only in the form of new units which are to be tried out this year, at least one by each individual teacher. These units are organized under the general heading of "Mutual Responsibilities and Opportunities of the City and Its Citizens." They are tentatively grouped according to grades and topics, as follows:

Grade III: Transportation—Safety
Grade IV: Food Supply—Health—Housing
Grade V: Communication—Education—Leaders
Grade VI: Government—Cultural Centers—Religion—Civic Organizations

Since these are the results, not of the work of a small committee but of a large number of teachers, and since they are based upon concrete experiences, the material should serve the purpose set up for it. The work of revision cannot at present be evaluated objectively because the ends sought will be changes produced in the personalities of children and in the thinking of the community itself.

NO STANDARDIZED ACHIEVEMENT TEST, if only because of its limited sampling, can be taken as a safe guide to what should be taught at any grade level. Moreover, because of the characteristic lack of agreement, in local courses of study and among curriculum authorities, regarding the proper grade placement of specific instructional materials, it is extremely doubtful that a test could be constructed so as to serve as such a guide. The test results may sometimes indicate the *need* for curriculum reorganization, but the test itself will not indicate *how* that reorganization should be effected. To secure such help, the teacher should refer not to the test but to the better courses of study now available; to reports of curriculum investigations; and to the writings of authorities on the curriculum.—Lindquist, E. F., p. 483 of this yearbook.

SELECTION AND GRADATION OF THE SPELLING VOCABULARY

FREDERICK S. BREED

Associate Professor of Education, University of Chicago, Chicago, Illinois

SINCE THE PUBLICATION, in the late nineties, of Rice's article entitled "The Futility of the Spelling Grind," [1] educators have shown greatly increased interest in the improvement of courses of study in spelling. They have been endeavoring to find out how many words should be included in the minimal spelling list, whether the words should be chosen on the basis of childhood or adult usage, whether they should be chosen on the basis of frequency of use or frequency of misspelling, and whether they should be graded according to difficulty, according to the grade in which they first occur, or according to the grade in which they are most commonly used.

MAJOR PROBLEMS OF WORD SELECTION

Size of vocabulary—Most investigators have come to agree that children should not be given more than about 3500 words in the minimal list. It has been found that the 3500 words most frequently used included 98.3 percent of 1,000,000 running words taken from adult writing.[2] Three recent studies [3] of children's writing vocabularies, including a total of 541,790 running words, showed that the 300 words of highest frequency comprised from 71 to 74 percent of all the running words in each study. Altogether, the available data indicate that if one goes much beyond 3500 words in the total for the minimal list, one encounters the law of diminishing returns. After the first 3500 adult words chosen on the basis of frequency, the next 500 similarly chosen would enable the child to spell less than 0.5 percent more of the total number of running words. By mastering these 500 additional words, the pupil would become able to spell correctly only one more word in every 233 written. There is a general consensus of opinion among those who have carefully studied the problem that for everyday or general usage it is not necessary to aim at greater efficiency than this in direct instruction.

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[1] Rice, J. M. "The Futility of the Spelling Grind." *Forum* 23: 163-72, 409-19: April-June 1897.

[2] Horn, Ernest. "The Curriculum for the Gifted: Some Principles and an Illustration." *The Education of the Gifted Child.* Twenty-Third Yearbook, Part I, National Society for the Study of Education. Bloomington, Ill.: Public School Publishing Co., 1924. p. 87.

[3] Mitchell, Philip S. *The Writing Vocabulary of Children in the Southern States.* Master's thesis. Chicago: University of Chicago, 1932. ¶ Troutt, Madge M. *Development of the Writing Vocabulary of Children.* Master's thesis. Chicago: University of Chicago, 1931. ¶ Wheeler, Arville. *The Writing Vocabulary of Rural Children.* Master's thesis. Chicago: University of Chicago, 1934.

Recent data furnished by Foran [4] indicate that the above conclusion in regard to size of vocabulary is consistent with the present trend in spelling instruction. Foran reports the total number of words in the vocabularies of fifteen spellers in common usage, as follows:

A—4845	F—4135	K—3572
B—4833	G—4016	L—3468
C—4797	H—3819	M—3158
D—4766	I—3698	N—2708
E—4206	J—3614	O—2500

His comment on these figures includes the following statement: "The median number of words in the above table is 3819, and it happens that this speller (H) is one of the best and most recent."

Adult usage versus childhood usage—The decision as to whether frequency of childhood usage, frequency of adult usage, or both should be the basis of the minimal spelling list depends largely upon one's philosophy of education, and will so depend until experimental results take the problem out of the field of speculation. If childhood is merely a preparation for adult living, then it is proper to teach only those words commonly used by adults, with the hope that the words will not be forgotten before they are needed. If, however, childhood itself is regarded as a section of real life, then it seems proper to teach the words children need *when* they need them. If childhood is life itself as well as a period of preparation for adult life, then words used most commonly by both children and adults (or commonly by either) should probably be taught.

To determine the degree of resemblance between the vocabulary of children and that of adults, the writer at an earlier date compared a composite list of eleven vocabularies of adult correspondence, and a composite list of five vocabularies of children's themes.[5] He found 60 percent identity between the two lists. When he similarly compared the Commonwealth list [6] with the composite of five vocabularies of children's themes, he found an identity of 58.5 percent. When the distinctive portions of the two lists were analyzed it was found that they were composed of *almost entirely different types of words;* that the distinctive element in the children's list consisted of words referring to home and school, children's adventures, activities, and the like, while the distinctive element in the adult list consisted of abstract and gen-

[4] Foran, Thomas G. *The Psychology and Teaching of Spelling.* Washington, D. C.: Catholic Education Press, 1934. p. 45.

[5] Breed, Frederick S. "What Words Should Children Be Taught to Spell?" *Elementary School Journal* 26: 118-31, October; 202-14, November; 293-306, December, 1925.

[6] Horn, Ernest. *A Basic Writing Vocabulary: 10,000 Words Most Commonly Used in Writing.* University of Iowa Monographs in Education, 1st Series, No. 4. Iowa City: the University, 1926. 225 p.

eral terms, and words referring to business and other interests acquired only after a considerable degree of maturity. These results made it ultra-clear that a spelling vocabulary based on adult usage alone would include certain words that are not needed, and omit certain words that are needed, in the written expression of the child.

Need of further investigation—Altho numerous investigations of children's vocabularies have been made, it has been difficult to profit from these because of defects in the methods of tabulating and selecting the words. Some of these lists include all derived forms; others include only a few. Some omit all words of two letters, technical words, or very common words. The gravest defect of all is the omission of word frequencies, for such data are indispensable for the scientific selection and gradation of the spelling list. To the writer's knowledge, there is not yet a single *published* study of the vocabulary of children's writing that provides frequency of usage for the individual words.

SEVEN NEWER STUDIES OF CHILDREN'S WRITING

To secure the data required, an investigation [7] of children's writing was begun in 1928 at the University of Chicago, in connection with which six studies have now been completed.[8] A seventh study,[9] made at the Colorado State College of Education (formerly the Colorado State Teachers College), was included in the general investigation. Table 1 shows for each study whether the words were drawn from an urban or a rural source, what section of the country the sample represents, what grades were sampled, when the study was made, whether the material consisted of letters or themes, how many running words were tabulated in each grade, and how many different words were found.

Method of study—The six University of Chicago studies all used the same technic. Themes were collected from a large number of children, who were permitted to write on topics of their own choice. The children were instructed to use, as they wrote, any word they wanted to use, and to write a word whether they were certain of the spelling or not. They were not permitted, however, to receive any help in spelling from either a teacher or a dictionary. A half hour was allowed for writing each theme.

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[7] This study was made possible by the assistance of the Federal Emergency Relief Administration and the National Youth Administration, thru assignments of the Board of Vocational Guidance and Placement, University of Chicago, and by financial support received from the Department of Education, University of Chicago.

[8] Dillon, Bessie. *The Writing Vocabulary of Fifth, Sixth, Seventh, and Eighth Grade Pupils.* Chicago: University of Chicago, 1932. ¶ Mitchell, Philip S., *op. cit.* ¶ Troutt, Madge M., *op. cit.* ¶ Van Bruggen, John A. *Geographic Differences in the Writing Vocabularies of Children.* Master's thesis. Chicago: University of Chicago. 1933. ¶ Wheeler, Arville, *op. cit.* ¶ Wilson, Katharine G. *The Writing Vocabulary of Second-, Third-, and Fourth-Grade Pupils.* Master's thesis. Chicago: University of Chicago, 1928.

[9] Simpson, Mary I. *Vocabulary of Children's Letters.* Master's thesis. Greeley: Colorado State College of Education, 1929.

In tabulating the data, all derivative forms were listed as separate words. Frequency of usage and frequency of misspelling of each word were recorded by grades. It was possible to include the study from the Colorado State College of Education with the others, because it included words from all elementary grades and reported the frequency of each word in each grade.

TABLE 1—INFORMATION REGARDING THE SEVEN INVESTIGATIONS OF CHILDREN'S WRITING

AUTHOR	FEATURES						
	Urban or Rural	Section of U. S.	Grades Included	Year of Investigation	Type of Material	No. of Running Words	No. of Different Words
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dillon.....	Urban	Middle West	V–VIII	1932	Themes	289,096	7,411
Mitchell....	Urban	South	II–VIII	1932	Themes	141,952	5,269
Simpson....	Urban & Rural	39 States	I–VIII	1929	Letters	67,143	3,735
Troutt.....	Urban	East	II–VIII	1931	Themes	110,363	4,579
Van Bruggen..	Urban	Pacific Coast	II–VIII	1933	Themes	108,756	5,329
Wheeler....	Rural	Kentucky	II–VIII	1934	Themes	289,475	5,540
Wilson.....	Urban	Middle West	II–IV	1928	Themes & Letters	186,427	3,765

Number of running words—The total number of running words tabulated in the seven studies was almost 1,200,000: 1,126,069 in the Chicago studies and 67,143 in the Colorado study. The total number of different words found was 12,437.[10] Space does not permit including a tabulation of the number of running words by grades. The total for each study is given in Table 1.

Number of different words—The number of different words found in each grade in each study is presented in Table 2. The total number of different words found in a study is, of course, not the same as the sum of the numbers of different words found in the several grades, because many words used in one grade are also used in other grades. For the same reason—repetition—one cannot obtain the total number of different words used in a given grade by adding the numerical values presented in a single column of the table.

[10] This number is tentative, being subject to slight change after further checking. The complete list, with grade and total frequencies for each word, is in preparation for publication.

TABLE 2—NUMBER OF DIFFERENT WORDS TABULATED BY GRADES IN SEVEN INVESTIGATIONS OF CHILDREN'S WRITING

INVESTIGATOR	GRADE								TOTAL NO. OF DIFFERENT WORDS
	I	II	III	IV	V	VI	VII	VIII	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dillon	....	....	....	....	3248	3540	3713	4900	7411
Mitchell	....	605	1394	1673	2025	2215	2394	2760	5269
Simpson	322	567	1197	1360	1364	1403	1511	1853	3735
Troutt	....	254	1417	1448	1687	1943	2348	1919	4579
Van Bruggen	....	871	1594	1682	1950	2162	2020	2696	5329
Wheeler	....	1313	1806	2131	2306	2753	2841	2511	5540
Wilson	....	1588	2434	2731	....	....	....	....	3765

OTHER IMPORTANT VOCABULARY PROBLEMS

There are several important vocabulary problems on which these studies provide additional information, among which are the following:

1. What is the difference, if any, between the writing vocabulary of rural children and that of urban children?
2. What is the difference, if any, between the writing vocabulary of children in one section of the country and that of children in a widely separated section?
3. What is the difference, if any, between a writing vocabulary based on children's themes and one based on children's letters?
4. What is the difference, if any, between a spelling vocabulary based on frequency of usage and one based on frequency of misspelling?

Rural and urban usage—Wheeler, whose study was confined entirely to the writing of rural children, compared his findings with those which Troutt and Mitchell had obtained from themes written by urban children. He found only 248 words with frequencies of ten or more in the rural study which were not found at all in the urban studies, *and only 26 of these words seemed particularly related to rural life.* As a result of this comparison, Wheeler concluded that "the writing vocabularies of rural and urban children are practically identical. The slight variations noted are probably due largely to the influence of the topics upon which themes were written." [11] These results have more than mere academic interest, for they help determine to what extent, if at all, different spelling courses should be prepared for city and country children.

Geographic influence on vocabulary—Comparisons of the vocabularies from different sections of the country show that differences in word usage between sections are exceedingly small. Troutt's Atlantic-Coast list and Wilson's Middle-West list show 63 percent identity for

[11] Wheeler, Arville, *op. cit.*, p. 59.

the third grade and 61 percent identity for the fourth grade. Mitchell's Gulf-Coast list and Troutt's Atlantic-Coast list also show 63 percent identity, and there is 81 percent identity between the 1000 words of highest frequency in each list. Van Bruggen's Pacific-Coast list and Troutt's Atlantic-Coast list show 62 percent identity. These percentages may at first glance seem low, but when one considers that two lists based on such extensive tabulations as Thorndike's [12] and Horn's [13] show only 55 percent identity, they appear to be relatively high.

The writing vocabularies of children in different geographic locations thus seem to vary one from another less than the reading vocabulary of adults varies from the writing vocabulary of adults. In fact, such vocabularies of children's writing seem to vary less, one from another, than the writing vocabulary of adults varies from the writing vocabulary of children. But percentage of disparity is not an entirely satisfactory measure of the difference that exists in cases like these. This percentage expresses only *degree* of difference, when the *kind* of difference is extremely important also.[14]

Another approach to this problem is to make a detailed analysis of the different words in two compared vocabularies. This was done by Mitchell in his comparison of southern and eastern usage, and revealed only eleven words which could definitely be said to have been influenced by geography, as follows: *skate, skiing, sled, sledding, sleds, sliding, slippery, snowed, snowball, snowballs,* and *snowing.*

The conclusion reached in these studies is that geographic influence on the minimal writing vocabulary is exceedingly small, but should be recognized in preparing a course of study in spelling.

Children's letters versus children's themes—A comparison of the lists obtained by Mitchell from children's themes and by Simpson from children's letters revealed 55 percent identity between them. When only the 700 words of highest frequency in each list were considered, 65 percent identity was found. When Troutt's list, secured from children's themes, and French's list, secured from children's letters, were compared, 54 percent identity was found. These percentages suggest that the theme and letter vocabularies of children differ more from each other than do theme vocabularies from different sections of the country. If this is true, the use of children's letters as a source of material will

[12] Thorndike, Edward L. *The Teacher's Word Book.* New York: Teachers College, Columbia University, 1921.

[13] Horn, Ernest. *A Basic Writing Vocabulary: 10,000 Words Most Commonly Used in Writing.* University of Iowa Monographs in Education, 1st Series, No. 4. Iowa City: the University, 1926. 225 p.

[14] A part of the disparity between the writing vocabularies of any two groups of children is due to sheer chance; that is, two other groups chosen in exactly the same way would show a different degree of disparity from that shown by the first two groups. The influence of this chance factor upon the results of vocabulary studies has never been measured satisfactorily.

probably contribute a small but important element to the minimal spelling vocabulary.

Frequency of misspelling and frequency of use—To throw light on whether frequency of misspelling or frequency of usage should be adopted as the basis of selecting words for the minimal list, a comparison was made between the 100 words having the highest frequency of usage in Van Bruggen's list, and the 100 words having the highest frequency of misspelling in the same list. The percentage of identity was 38. When one considers that words of high frequency of usage afford frequent occasion for misspelling, it may be surprising that the identity was so small. Perhaps the reason is that frequency of usage also represents opportunity for practise, and hence improvement.

These results tend to confirm previous conclusions that a spelling vocabulary based upon frequency of misspelling will differ considerably, other things equal, from a spelling vocabulary based on frequency of usage, which means that it is important to make a decision between the two bases. This decision should be made on the grounds of principle. The principle, negatively stated, is that difficulty of spelling should have nothing whatever to do with the determination of the minimal spelling list. Difficulty is important for the organization of lesson units, and for the guidance of instructional emphasis; usage is important for the selection and gradation of words.

PRINCIPLES OF WORD SELECTION

Certain principles derived from a critical study of various sources of words, and the contributions which these sources make to the minimal spelling vocabulary, are briefly described in the following paragraphs.

Between the writing vocabularies of urban and rural children, of children in one section of the country and those in a widely separated section, and of children's themes and children's letters, the differences are very small but of such a nature that they should be recognized. The amount of significant difference is at present more safely indicated by detailed analysis of the divergent elements in two vocabularies compared, than by a general percentage of disparity between them. Such analysis will indicate whether or not the distinctive element in one vocabulary is composed of words *that differ in kind* from the distinctive element in another, and, therefore, whether or not the difference can safely be attributed to chance.

In comparing the vocabulary of adults with that of children, or the vocabulary based on frequency of misspelling with that based on frequency of usage, the detailed analysis of divergent elements reveals that the differences observed are due less to chance than to the inclusion of words of different types.

What do these results mean when applied in practise? They seem to mean that every approved source of words which makes a distinctive contribution should be properly sampled and used. For this reason urban as well as rural writing, writing from various sections of the country, and themes as well as letters should be included. With regard to the adult-childhood problem, the writer has recently taken the position that the adult vocabulary is not an approved source of words for Grades II to IV, inclusive. Frequency of *children's* usage appears to be a sufficient basis for word selection in these grades, if the frequency values are large enough to be reliable. This principle leads to the inclusion of an appreciable percentage of words that would be excluded on the basis of adult usage alone.

But what about the use of the adult vocabulary in Grades V thru VIII? The answer will vary with different workers. Altho the Chicago investigation provides the frequencies of the words by grades, the frequency values of many obviously important words remaining after the lists for the lower grades have been selected are so low as to be unreliable. From the fifth grade on, therefore, the following principles are recommended: (1) of several childhood words, all equal and relatively low in frequency, that word is a better selection which is found also in the usage of adults; (2) of several words of equally low frequency in the usage of children, and found also in the usage of adults, that word should be given preference which has the highest frequency of adult usage; and (3) in the highest grades, especially the eighth, the inclusion of a limited number of words found only in the adult vocabulary is justified, if the frequency of usage is sufficiently high.

A TECHNIC OF WORD SELECTION

Simultaneous selection and gradation of words—In deriving a minimal vocabulary, the size of the list should be determined before selection of words begins. The question as to the size of the minimal list was briefly discussed at the beginning of this report. We shall, therefore, turn at once to the technic of word selection.

To give the reader a clearer picture of the detailed data used in selecting spelling words from the new composite of seven writing vocabularies of children, Table 3 presents the first eighteen words in this composite, together with the frequency of each word in each of seven grades, and the total frequency of each word in all grades combined. The words appear in alphabetic order in the first column; then in regular sequence come the data for Grades II thru VIII, and the column showing the grand total for each word at the extreme right. The frequency values in Grades II, III, and IV have been statistically adjusted to place them on a comparable basis with the frequency totals in the remaining grades.

Detailed application of the method—Selection of words from the tabulation illustrated in Table 3 is begun in the second grade. Words are selected on the principle, implied above, that to the second grade should be assigned the words most frequently used by pupils in that grade. The data in the second column of the table show precisely which words, of all those used by the elementary-school pupils, were used by second-graders. For example, the second-grade pupils whose writing was sampled in this investigation used the word *a* 6885 times, and the word *about* 191 times, but they made no use whatever of the words *abbreviation* and *aboard*. The second-grade words are selected from this column by simply withdrawing the words of highest frequency until the desired number is obtained.

After the second-grade words have been excluded as possibilities for selection in the third-grade column, this column is canvassed precisely as was the preceding column, and the words are chosen that have the highest frequencies among all the remaining ones used by third-graders. Similarly, the process is continued in the fourth grade.

As already indicated, the data on children's usage are supplemented by data on adult usage in selecting words for Grades V to VIII, inclusive. For example, all of the following words are selected, altho none of them can be reliably selected on the basis of its frequency in the childhood vocabulary: *absolutely, accept, according, addressed, ad-*

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A. B.	0	0	0	0	0	0	1	1
abbreviation	0	0	0	0	1	0	0	1
abc's	0	0	0	0	1	0	0	1
ability	0	0	0	0	1	2	6	9
ablaze	0	0	0	1	0	3	0	4
able	0	22	245	167	29	24	39	526
aboard	0	3	0	0	1	7	9	20
abounding	0	0	0	0	0	0	1	1
about	191	276	387	607	649	903	953	3,966
above	0	0	3	29	39	20	45	136
abroad	3	0	0	0	4	1	3	11
abscess	0	0	0	0	0	0	2	2
absence	2	0	0	0	4	0	3	9
absent	2	0	9	5	3	6	5	30
absolutely	0	0	0	0	0	0	7	7
absorb	0	0	0	0	0	0	4	4
absorbed	0	0	0	0	0	0	1	1

vise, advised, agent, appreciated, approval, and *article.* The frequencies of these words are all below 12 in the children's vocabulary, but all are among the 1000 words used most commonly in adult writing, according to the Commonwealth list. Incidentally, these words have a mature flavor about them and suggest the phraseology of business correspondence, which was a large and appropriate source for the Commonwealth study.

Attention should be called to the most doubtful segment of the vocabulary proposed, namely, words frequently found in adult writing, but not found at all in the new vocabulary of children's writing. The following are examples, with their location in the Commonwealth compilation:[15] *acceptance,* 3a; *advisable,* 2b; *application,* 1b; *behalf,* 3b; *bond,* 2a; *bulletin,* 2b; *cancel,* 2a; *canceled,* 2a; *cancellation,* 3a; and *circumstances,* 2a. The number of such words is relatively small. They should obviously be placed high in the grades, if included at all.

To what extent does a vocabulary built in the manner described—that is, on the basis of both childhood and adult usage—differ from one built entirely on the basis of adult usage? To answer this question let us compare a vocabulary of 3815 words selected as just described, with the 4000 words of highest frequency in adult writing. This comparison reveals 801 words in the former vocabulary that are not found in the latter. This figure represents a preliminary count, but is approximately correct. It means that 21 percent of the new vocabulary consists of words that would not be selected if the data on adult writing were the only source for a spelling vocabulary of 4000 words.

The words on which the two methods of vocabulary construction show the greatest divergence are the following: *acorn, balloon, clown, cowboy, cowboys, dive, elephant, Eskimos, fox, foxes, hind, jack-o'-lantern, jerk, kite, paw, paws, princess, Santa Claus, scooter, snowball, snowballs, tiger,* and *tigers.* These words not only do not appear in the 10,000-word adult list; they are not represented by derived forms, and none is a derivative of a root form in that list. They furnish the best illustrations, in written discourse, of the verbal interests of children as contrasted with the verbal interests of adults. Such words are used frequently enough by children, but not frequently enough by adults, to warrant their selection for the minimal spelling vocabulary.

OUTLOOK FOR THE FUTURE

While much remains to be done in the field of spelling vocabulary, more remains to be done in the field of spelling instruction. No other subject can claim so large a body of objective material for curriculum

[15] The numeral following a word indicates the thousand; the letter, the first or second half of that thousand.

making as spelling. Tho a certain percentage of the words to be taught is still in dispute, the importance of this dispute should be weighed in the light of two considerations:

1. *Differences due to unreliability of frequency values*—Such differences result from insufficient sampling, from the nature and variety of topics upon which pupils write, and from other variable factors. These differences create uncertainty where reliable frequencies have been exhausted for a particular grade and additional selections have to be made from the remaining words. In some of these instances, however, the difference may be insignificant, and the choice of words a matter of indifference.
2. *Differences due to disagreement on principles*—The question of selecting words on the basis of children's usage alone or on the basis of adults' usage alone is an example. Differences of this type will persist regardless of improvement in the reliability of word frequencies. Such differences cannot be settled by accumulating more frequency data; they can be settled, it seems, only by the accumulation of experimental results.

In the writer's opinion, we are nearer to a solution of the vocabulary problem in spelling than is ordinarily supposed. In any case, it seems obvious that there are more important avenues of advance in this subject than any in the domain of vocabulary. The days have passed when a barren list of words can pass for a course of study in spelling. Supervisors and classroom teachers seem ready for a more effective application of the best results of research to methods of teaching.

THE APPRAISAL of old and the discovery of new curriculum material which contributes to contemporary life and guides it in the direction of social advance is by far the most difficult method of curriculum building. It requires broad scholarship on the part of teachers. It involves mastery of the psychological principles governing the growth of human personality. It requires the intensive study of past and contemporary civilizations, an analysis of their strengths and weaknesses, and the far more difficult task of predicting desirable directions for further social advance. It calls for deep insight into the forces which direct the currents of civilization. It demands continual reappraisal of the purposes and procedures of the school in the light of changing conditions. It implies that a school curriculum can be forward-looking only if it is the subject of constant revision, experimentation, and reappraisal. —Norton, John K., and Norton, Margaret A., *Foundations of Curriculum Building,* Ginn and Co., 1936, p. 81-82. (Quoted by permission of the publishers.)

APPRAISING THE PROGRAM FOR TEACHING DIVISION

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LONG DIVISION is generally looked upon as the most difficult process in arithmetic in the elementary school. There are two apparent reasons why this is true. First, division is a composite of other processes. Second, the actual need for long division is seldom experienced by pupils in the elementary school. As a result, this process must be learned chiefly as a manipulative procedure. Other processes in arithmetic may be taught in an activity program, but the writer has never seen a published report showing how long division will fit into such a program. Breed [1] recently reported an unanswered challenge from representatives of certain teacher-training institutions to show how long division may be taught by the project method.

To make the process of division as easy as possible, the program for teaching it should be appraised with reference to the following questions:

1. Is division with a one-figure divisor taught in the short or long form?
2. Is checking taught as part of the process of division?
3. What method is used in estimating the quotient when the divisor is a two-figure number?
4. In which grade or grades is the topic of long division taught?

This article summarizes certain research findings which bear on these questions, and makes recommendations which may be used as criteria in judging the program for teaching division in an elementary school.

What form of division should be used for a one-figure divisor?—This question can be answered with a degree of assurance that is seldom possible in the solution of an educational problem. Only the long form should be used for both easy and difficult divisors. The writer has reported elsewhere [2] an experiment in which the preponderance of evidence favored the long form. Since that study was reported, letters have been received requesting evidence on the relative merits of the short and long forms for the easy divisors—2, 3, 4, and 5. In the reported study, all one-figure divisors from 2 to 9, inclusive, were used.

In May 1936, a test in division was given in two nearby school centers to a group of pupils in Grades V and VIII. The same test was

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given also to a group which is referred to here as Grade XV. This group was composed of juniors and seniors in the college where the writer is employed. The pupils in Grade V had been taught to use the long form in dividing by a one-figure divisor, but those in the other two groups had been taught the short form. Each group was asked to solve the test problems by means of both the short and long forms of division. The quotient in each example included either three or four figures. The number of estimations for each divisor used was as follows: divisor 2, ten estimations; divisor 3, fifteen estimations; divisor 4, fourteen estimations; divisor 5, nineteen estimations.

Only the number of errors was considered in scoring this test. An error consisted of an incorrect figure in either the quotient or the remainder. The results of the test are given in Table 1.

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GRADE	NUMBER OF PUPILS	AVERAGE NUMBER OF ERRORS IN SHORT DIVISION	AVERAGE NUMBER OF ERRORS IN LONG DIVISION	DIFFERENCE (COLUMN 3 MINUS COLUMN 4)	RATIO OF DIFFERENCE TO PROBABLE ERROR OF DIFFERENCE
(1)	(2)	(3)	(4)	(5)	(6)
V.....	317	3.68	2.60	1.08	5.5
VIII....	236	3.50	1.96	1.54	5.6
XV[a]....	148	2.15	0.70	1.45	9.9

Read table: The 317 pupils in Grade V made an average of 3.68 errors in short division, and an average of 2.60 errors in long division; the difference of 1.08 was 5.5 times as large as its "probable error." Similarly read figures for Grades VIII and XV.

[a] Grade XV included college juniors and seniors.

Table 1 shows that the average number of errors made in short division was larger for each group than the average number of errors in long division. Altho the differences seem small, column 6 shows that none of them was less than 5.5 times as large as its probable error. When a difference between two averages is at least 4 times its probable error, there is said to be a "significant" difference between the averages. When this ratio is 4.9, the chances are only 9 in 10,000 that a similar difference would not be obtained if the experiment were repeated with other groups of pupils.[3] Hence, the chances that another group would make fewer errors by the short method than by the long method are almost infinitesimal. Since the preponderance of evidence is in favor of the long method, the teacher should see that her pupils learn to divide by that method, regardless of the number of figures in the divisor.

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Should checking be taught as a part of the division process?—Elsewhere the writer [4] has reported the results of an investigation on the value of checking as a means of increasing the accuracy of the computation in division when the divisor is a one-figure number. The check consisted of multiplying quotient by divisor and adding the remainder, if there was a remainder, to the product. The study included the daily records of 404 fourth-grade pupils from October to January, inclusive, during the school year 1934-35. These records indicated that checking did not increase the accuracy of the computations.

The results of another study, including the records of this same group of pupils for the second semester of the school year mentioned, are now available. In this study the pupils divided with two-figure divisors only. As in the previous investigation, each example was checked by multiplication. When the papers were scored under the writer's supervision, the *cause* of each error was indicated. Then the paper was returned to the pupil, and he was required to correct the error in the example and in the check before the paper was filed by the writer. This process was continued from February to May, inclusive.

The ineffectiveness of checking as a means of increasing accuracy among these fourth-grade children was further validated by this second experiment. There was not one case in which the pupil changed an example because the final result of the checking process was not the same as the dividend. However, there were many cases in which the check was made to agree with the example. This fact is shown by the second item in Table 2.

Table 2 shows the frequency of different types of errors made in checking the examples. An "error" was defined as an incorrect procedure or as a mistake in a number combination. This table indicates that the incorrect examples either were made to check by means of errors, or were not corrected at all when the check did not equal the dividend. Since this practise persisted during an entire school year for both one-figure and two-figure divisors, it is reasonably safe to conclude that checking does not aid the typical fourth-grade pupil in increasing the accuracy of his computation in division. It is to be remembered that each week the pupils' errors in checking were pointed out, just as were their errors in solving the original examples.

The writer does not wish to minimize the practical value of checking an arithmetical computation. The point at issue is the *time* at which this process should be introduced. The data summarized here show that checking is of no apparent value in creating and maintaining

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[3] Holzinger, Karl J. *Statistical Methods for Students in Education.* Boston: Ginn and Co., 1928. p. 237.

Should checking be taught as a part of the division process?—Elsewhere the writer [4] has reported the results of an investigation on the value of checking as a means of increasing the accuracy of the computation in division when the divisor is a one-figure number. The check consisted of multiplying quotient by divisor and adding the remainder, if there was a remainder, to the product. The study included the daily records of 404 fourth-grade pupils from October to January, inclusive, during the school year 1934-35. These records indicated that checking did not increase the accuracy of the computations.

The results of another study, including the records of this same group of pupils for the second semester of the school year mentioned, are now available. In this study the pupils divided with two-figure divisors only. As in the previous investigation, each example was checked by multiplication. When the papers were scored under the writer's supervision, the *cause* of each error was indicated. Then the paper was returned to the pupil, and he was required to correct the error in the example and in the check before the paper was filed by the writer. This process was continued from February to May, inclusive.

The ineffectiveness of checking as a means of increasing accuracy among these fourth-grade children was further validated by this second experiment. There was not one case in which the pupil changed an example because the final result of the checking process was not the same as the dividend. However, there were many cases in which the check was made to agree with the example. This fact is shown by the second item in Table 2.

Table 2 shows the frequency of different types of errors made in checking the examples. An "error" was defined as an incorrect procedure or as a mistake in a number combination. This table indicates that the incorrect examples either were made to check by means of errors, or were not corrected at all when the check did not equal the dividend. Since this practise persisted during an entire school year for both one-figure and two-figure divisors, it is reasonably safe to conclude that checking does not aid the typical fourth-grade pupil in increasing the accuracy of his computation in division. It is to be remembered that each week the pupils' errors in checking were pointed out, just as were their errors in solving the original examples.

The writer does not wish to minimize the practical value of checking an arithmetical computation. The point at issue is the *time* at which this process should be introduced. The data summarized here show that checking is of no apparent value in creating and maintaining

[4] Grossnickle, Foster E. "To Check or Not to Check." *Elementary School Journal* 36: 35-39; September 1935.

TABLE 2—ERRORS OF FOURTH-GRADE PUPILS IN CHECKING DIVISION WITH DIVISORS OF TWO FIGURES

DESCRIPTION OF ERROR	FREQUENCY
(1)	(2)
1. Did not find error when result in check and dividend were not the same	510
2. Multiplied quotient and divisor so that example checked	399
3. Multiplication error in check same as in example	295
4. Added remainder incorrectly (number combinations)	288
5. Added partial products incorrectly (number combinations)	252
6. Combination error in multiplication	246
7. Did not check the example	190
8. Added wrong "carry" number in multiplication	160
9. Did not carry in multiplication	135
10. Did not add remainder to product	92
11. Carried when not necessary in multiplication	70
12. Did not carry when adding the remainder	68
13. Carried wrong number in adding the remainder	37
14. Used quotient different from that in example	36
15. Carried when not necessary in adding remainder	32
16. Placed partial products incorrectly	24
17. Added different remainder from that in example	22
18. Multiplied by number not the divisor	16
19. Subtracted remainder instead of adding it	15
Total	2,887

accuracy in division in the fourth grade. Evidently, therefore, checking should be taught at a later date when the pupil has mastered the intricacies of the division process itself. When checking is taught, not only the correct method should be shown but the need and importance of checking should be emphasized.

In business and industrial fields, more than one check is often employed. Likewise, more than one means of checking should be presented to pupils. The judicious use of an answer book seems most commendable for checking. Of course, the pupil should be shown the multiplication check, and also be taught to go over his work another time. When the value of checking is fully appreciated, all three of these checks can be used to advantage. Until the pupil becomes aware of the need and importance of checking division, however, any of the three means suggested will be perfunctory. Therefore, the writer's answer to the second question proposed for appraising the program in division is as follows: First, teach the process of division without wasting time with checking. As soon as division itself has been mastered, and when the importance of checking can be really appreciated, teach the pupil how to check his work in division.

How should the quotient be estimated when the divisor is a two-figure number?—At least ten different methods for estimating the quotient in long division are used in arithmetic textbooks.[5] Two of the most widely used methods are known as the "apparent method" and the "increase-by-one method." By the apparent method, the tens' figure in the divisor remains unchanged regardless of the units' figure. By the increase-by-one method, when the units' figure in the divisor is 5 or less, the tens' figure is unchanged; when the units' figure is 6 or more, the tens' figure is increased by one.

Upton[6] has made a plea for the increase-by-one method with a few minor variations. Because the method which he advocates brings the correct quotient in a relatively high percent of estimations, he recommends it as the best procedure.

To determine whether an advantage accrues from using the apparent method instead of the increase-by-one method, or vice versa, the writer obtained data from two school centers during the spring semester of the school year 1934-35. Seven fourth-grade teachers cooperated in each school center. In one of these centers, 216 pupils were taught by the apparent method; in the other center, 233 pupils were taught by the increase-by-one method.

The two groups were equated on several factors: (1) I. Q., as determined by the *National Intelligence Test;* (2) ability to give the correct responses to the 100 subtraction facts, the 90 multiplication facts, and the 90 even-division facts; and (3) ability to use a one-figure divisor. The score made on each of these tests by a pupil in the group using the apparent method, was paired with the score made on the same test by a pupil in the group using the increase-by-one method.

All of the practise exercises used by these pupils were supplied by the writer. No practise was given in subtraction, multiplication, or division except that contained in these special exercises. The work consisted of 76 days of teaching, or about 15 weeks. At the first of each week, that week's quota of practise exercises was supplied to the pupils, as well as the practise sheets used during the preceding week. The latter were scored and each error was pointed out to the pupil. He was required to correct each example and to check it correctly before his paper was filed by the writer. The new work assigned each week and the correction of previous work usually required from two to four periods of 38 minutes each week. The remaining time assigned

[5] See: Grossnickle, Foster E. "Methods of Estimating the Quotient in Long Division Used by Teacher-Training Students." *Elementary School Journal* 35: 448-53; February 1935.

[6] Upton, Clifford B. "Making Long Division Automatic." *The Teaching of Arithmetic.* Tenth Yearbook. National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1935. p. 251-89.

to arithmetic each week could be devoted to any phase of number except division and its concomitant processes.

Four different achievement tests in division with a two-figure divisor were given to each of the two groups. The first test was given at the beginning of the experiment, before the pupils had had any practise with two-figure divisors. This test consisted of the easy estimations in which the quotient was self-evident, as in the example $24\overline{)\,264}$, or in which the estimated quotient was the true quotient. The second test was given after 35 days of teaching. In this test, the estimated quotient was always the true quotient. All types of quotients containing zeros were included. The third test was given after 18 more days of teaching and practise; it consisted of examples in which the true quotient was the estimated figure or one less than the estimated figure. The fourth and final test was given after 23 additional days of teaching and practise. All types of difficulties were included in this test, except for the division "demons" (divisors from 13 to 18, inclusive). The time for the tests was determined by the results on the practise exercises. When a majority of the pupils had perfect papers with a certain type of estimation, the test on that type was given.

Space does not permit inclusion of the detailed results of this experiment in this article.[7] A comparison of the average scores on each test showed very small differences between the two groups. In only one case was the difference statistically significant. When the two groups were equated on the basis of I. Q., the difference between their average scores on Test 4 was 4.7 times its probable error. In this case, therefore, the difference was significant, but in all other cases it could be attributed to chance. The one significant difference was in favor of the group using the apparent method.

In view of these facts, surely no one can defend the use of the increase-by-one method as the correct procedure for "making long division automatic." The writer believes that the third question proposed should be answered as follows: There is no appreciable difference between the apparent and the increase-by-one methods for producing accuracy in long division, but since many more people use the apparent method than any other, children should be taught to use this method for estimating the quotient when the divisor is a two-figure number.

In what grade or grades should long division be taught?—Recently there has been a movement to put long division in the fifth grade. California was one of the first states to make this change, and since then other states have taken similar action. Buckingham[8] showed that the

[7] For the detailed results, see: Grossnickle, Foster E. "An Experiment with Two Methods of Estimation of the Quotient." *Elementary School Journal* 37: 668-77; May 1937.

[8] Buckingham, B. R. "When to Begin the Teaching of Arithmetic." *Childhood Education* 11: 339-43; May 1935.

tendency at present is to push the teaching of arithmetic into the later grades. One of the most extreme illustrations of this tendency is reported by Benezet.[9] He would postpone all drill material in arithmetic until the pupil reaches the sixth grade.

The work of the Committee of Seven of the Northern Illinois Conference on Supervision has exerted an influence on the grade placement of long division. The following recommendation on this question was made by that committee:

> At the mental level of nine years ten months, which is approximately the fourth-grade level, considerably less than half the children have a chance of making a retention test score of 80 percent in long division, even if they have made a score in simple multiplication of 100 percent, one in short division of 88 to 100 percent, and one in subtraction of 100 percent. Long division apparently should not be taught until a mental level of twelve years seven months, or well along into the sixth grade for children who are average or above in mental age.[10]

The average mental age of the pupils in the investigation reported under the third question above was nine years and seven months, as determined by the *National Intelligence Test* in October. Since the final division test was given in the following June, it may be assumed that the pupils' mental age had increased about eight months, on the average, thus giving an average mental age of ten years and three months. The average accomplishment of the two groups on the final test was about 96 percent instead of the 80 percent recommended as a satisfactory standard of accomplishment by the Committee of Seven. Thus, it is clear that the recommendations of the Committee of Seven are not in agreement with the results of this investigation. This study shows conclusively that pupils who have the average mentality of the typical fourth grade can be taught long division with a two-figure divisor.

Because division can be taught successfully in the fourth grade, however, it does not follow that this is the most satisfactory place for the topic. The writer believes that putting all two-figure division in the fifth grade is not the correct solution of the problem of grade placement. Placement should be determined by the inherent difficulty of the process. Instead of a topical grade placement, there should be a spiral sequence of the process as determined by difficulty. It is not rational to teach all division with a one-figure divisor before introducing work with certain two-figure divisors. Surely the pupil encounters much more difficulty in the example, $7\overline{)4031}$, than in the example, $21\overline{)672}$. The latter can be taught very easily in the first part of the fourth grade. On the other hand, an example like $28\overline{)1923}$, or $16\overline{)9125}$,

[9] Benezet, L. P. "The Story of an Experiment." *Journal of the National Education Association* 24: 241-44; November 1935.

[10] Washburne, Carleton. "Mental Age and the Arithmetic Curriculum: A Summary of the Committee of Seven Grade Placement Investigations to Date." *Journal of Educational Research* 23: 226; March 1931.

probably should be taught in the fifth or even the sixth grade. With these points in mind, the answer to our fourth question may be summarized as follows: No one grade should be used for presenting all the difficulties in long division. This kind of sequence is a perpetuation of "bunched learning." The writer recommends that the topic be placed in at least two different grades, the placement of specific processes being determined by the inherent difficulty of those processes. This kind of sequence is conducive to "spaced learning," and most psychological experiments on learning show that "spaced learning" is superior to "bunched learning."

Summary of criteria—This article proposes that the program for teaching division be appraised in the light of the following recommendations:

1. Only the long form of division should be taught, regardless of the number of figures in the divisor. This is true for both the easy and difficult divisors.

2. Checking should be taught as a separate process after the essential procedure of division is well known.

3. There is no significant difference in the results obtained from estimating the quotient by the apparent method and by the increase-by-one method. Since the apparent method is more widely used than the other, the pupil should be taught to estimate the quotient by this method when the divisor is a two-figure number.

4. Division with a two-figure divisor should be placed in several grades instead of in the fifth grade only. The placement of various phases of this topic should be determined by their inherent difficulty, so as to provide opportunities for "spaced learning" instead of "bunched learning."

THE REFERENCES listed at the end of each chapter will be useful as a basis for further study of the problems of school appraisal.—*Editorial Committee.*

CHILDREN'S REACTIONS TO CERTAIN TYPES OF POETRY

RALPH A. FRITZ

Professor of Education, Kansas State Teachers College, Pittsburg, Kansas

WHAT PLACE should poetry have in our school offerings? Adequate appraisals of its value and of its contribution seem almost lacking. This article describes two attempts to evaluate the use of poetry as a part of school work. One undertook to measure the value of certain poems in teaching American history; the other, to determine the place and value of selected poems in building desirable attitudes. While the results are not conclusive, they are at least suggestive, and the technics used to obtain them will be of interest to principals and teachers.

The writer realizes that the learning of facts and the development of character are perhaps not the chief purposes of reading poetry. Reading in this field may need no justification other than the sheer enjoyment it gives. Nevertheless, it is worthwhile to discover what poems, if any, may be expected to contribute to certain other objectives of education.

POEMS AS SUPPLEMENTARY MATERIAL FOR AMERICAN HISTORY

The first study [1] tried to discover whether certain poems add to the pupils' interest and understanding of American history. It also attempted to determine the school unit in which the contribution of each poem was greatest.

Selection and appraisal of poems—About 800 poems were examined, and forty-four of them were selected by the subjective ratings of the investigator on the following six criteria: Each poem must (1) express a fact, (2) exalt worthy ideals, (3) arouse a feeling which the child should experience, and (4) add details not given in the history text; it also must (5) be interesting, and (6) be easy to understand. The poems selected, most of which appear in *Poems of American History*,[2] are listed later in this article. These forty-four poems were evaluated by 378 pupils, of whom 80 were in Grade VI, 213 in junior high school, and 85 in senior high school.

Forty-four exercises were mimeographed, each containing a prose quotation from a history textbook giving an important historical fact, followed by a quotation from one selected poem dealing with the same historical fact. Each pupil read both the quotation and the poem, and

[1] Johnson, Macie E. *Historical Poems as Supplementary Material for Teaching American History.* Unpublished master's thesis. Kansas State Teachers College, Pittsburg, Kansas, 1930.

[2] Stevenson, Burton E., editor. *Poems of American History.* Rev. ed. Boston: Houghton Mifflin Co., 1922.

then stated whether or not he thought the poem added interest and understanding to the textbook quotation. The general directions and the first of the forty-four exercises are given below:

DIRECTIONS

This is a type of reading exercise. It consists of statements taken from history. There are two parts to each exercise. The first part is a prose statement taken from a history textbook. The second part is a portion of a poem. Both the statement and the poem deal with the same historical fact. Read each statement carefully; then read the corresponding poem. If the poem adds interest or understanding to the prose statement, write "Yes" on the dotted line at the end of the poem. If the poem does not add interest or understanding to the prose, write "No" on the dotted line. Read all the exercises and write either "Yes" or "No" on each dotted line as you come to it. Do not leave any blank.

Your answer will not affect your history grade. Your teacher will not score these papers. Please write just what you think. Write "Yes" if the poem adds interest or understanding to the prose. Write "No" if it does not.

Any questions?

Ready—Begin.

"At daybreak of Friday, October 12, 1492, the boats were lowered and Columbus, with a large part of his company, went ashore, wild with exultation. They found they were on a small island, and Columbus named it San Salvador."

"Then, pale and worn, he kept his deck,
And peered through darkness. Ah, that night,
Of all dark nights; and then a speck—
A light! A light! A light! A light!
It grew, a starlit flag unfurled!
It grew to be Time's burst of dawn.
He gained a world; he gave that world
Its grandest lesson: 'On! Sail on!'"

. . . . . .

Twenty-five poems were given during the first sitting and the other nineteen at a second sitting. The pupils seemed to take the task seriously and the experimenter felt that the answers were frank and honest. However, the procedure leaves much to be desired so far as proof of its validity and reliability is concerned.

Results—About three-fourths of the answers stated that the poem in question added interest and understanding to the textbook material. No pupil voted either "yes" or "no" on all the poems. Each poem received some votes of "yes" and some of "no." The poems are apparently usable at all school levels, altho senior high-school pupils gave more "yes" votes, probably because of their greater knowledge of history. There was very little difference between the interests of boys and girls in these poems. Pupils of superior ability understood them a little better than average and slow pupils. No attempt was made to determine whether the poems helped the pupils to *retain* historical facts.

As a result of this study, 13 poems were recommended for use in

Grade VI; 13 for junior high school; and 18 for senior high school. The list of titles for each level is as follows:

FOR GRADE VI

Title of Poem	*Author*
Columbus	Joaquin Miller
Landing of the Pilgrims	Felicia Hemans
The First Proclamation of Miles Standish	Margaret Preston
The First Thanksgiving Day	Margaret Preston
Paul Revere's Ride	Henry W. Longfellow
Betty's Battle Flag	Minna Irving
Johnny Appleseed	William Henry Venable
Robert E. Lee	Julia Ward Howe
The Cable Hymn	John G. Whittier
Indian Names	Lydia H. Sigourney
The Brooklyn Bridge	Edna Dean Proctor
The Call to the Colors	Arthur Guiterman
A Song of Panama	Alfred D. Runyon

FOR JUNIOR HIGH SCHOOL

The Thanksgiving for America	Hezekiah Butterworth
The Fountain of Youth	Hezekiah Butterworth
Roger Williams	Hezekiah Butterworth
England and America in 1782	Alfred Tennyson
Sa-ca-ga-we-a	Edna Dean Proctor
The Death of Jefferson	Hezekiah Butterworth
Can't	Harriet Prescott Spafford
Chicago	John G. Whittier
The Ride of Collins Graves	John B. O'Reilly
The Pacific Railway	C. R. Ballard
Panama	John Jeffrey Roche
In Flanders Fields	John McCrae
The Republic	Henry W. Longfellow

FOR SENIOR HIGH SCHOOL

New England's Growth	William Bradford
God Makes a Path	Roger Williams
The Mother Country	Benjamin Franklin
What's in a Name	Helen F. Moore
The American Flag	Joseph R. Drake
Song of Marion's Men	William C. Bryant
News From York Town	Lewis W. Smith
The Federal Convention	Unknown
The New Roof	Francis Hopkinson
On the Death of Benjamin Franklin	Philip Freneau
Lincoln the Man of the People	Edwin Markham
Brother Jonathan's Lament for Sister Caroline	Oliver Wendell Holmes
O Captain! My Captain	Walt Whitman
The Blue and the Gray	Francis Miles Finch
Centennial Hymn	William C. Bryant
Bartholdi Statue	John G. Whittier
Britannia to Columbia	Alfred Austin
Those Rebel Flags	John H. Jewett

POEMS FOR BUILDING DESIRABLE ATTITUDES [3]

If one accepts the civic-social-moral objective in education,[4] it would seem that poetry might help to attain this objective. Certain kinds of poetry might be expected to improve character by building emotionalized attitudes which will influence the conduct and action of pupils.[5] Among the obviously desirable attitudes are those of usefulness, trustworthiness, and loyalty.

Poems of narration dealing with the adventures of heroes usually hold the interest of pupils in the intermediate and junior high-school grades.[6] Can we not select narrative poems whose adventurous heroes exemplify the attitudes of usefulness, trustworthiness, and loyalty, and by use of these poems in literature classes build up or strengthen these trait-attitudes in our boys and girls? Can we not expect these attitudes thus to become so emotionalized that they will lead to conduct and action which likewise is useful, trustworthy, and loyal? Will not this constitute partial attainment of the civic-social-moral objective?

Selection and appraisal of poems—From many lists of children's poetry, forty-one poems were selected in which the narrative element seemed outstanding. From these all poems were eliminated that lacked altruistic situations, or heroes exhibiting at least one of the admirable traits of usefulness, trustworthiness, and loyalty. Further eliminations were made because of too great reading difficulty, too many characters, and too many traits, until ten poems remained. These ten, as listed in Ballot B (Figure II), were finally appraised by 435 pupils, of whom 143 were in Grade VII, 143 in Grade VIII, and 149 in Grade IX.

The teacher read one of the ten poems to the pupils each day in the literature class. Immediately after the reading each pupil marked a copy of Ballot A (see Figure I). On the day of the reading of the tenth poem, each pupil also marked Ballot B, which helped to recall all the poems so that he could choose the one he liked best. The instructions given below, as well as the copies of Ballots A and B in Figures I and II, are self-explanatory.

INSTRUCTIONS TO PUPILS

I am going to read you a story-poem. Listen carefully while I tell you the name of the poem and what the main person in the story is called. After you hear the poem you will be asked to answer some questions about the story it

[3] The report of this study is based on: Potter, May Pauline. *A Suggested Technique for the Selection of Poems to be Used in the Junior High School.* Unpublished master's thesis. Kansas State Teachers College, Pittsburg, Kansas, 1931.

[4] See: Koos, Leonard V. *The American Secondary School.* Boston: Ginn and Co., 1927. p. 154.

[5] See: Briggs, Thomas H. *Curriculum Problems.* New York: Macmillan Co., 1926. p. 70-72.

[6] See: Huber, Miriam B.; Bruner, Herbert B.; and Curry, Charles M. *Children's Interest in Poetry.* New York: Rand McNally and Co., 1927. 233 p.

tells. In answering these questions tell exactly what you think, for this is not a test and it has nothing to do with your grades or marks in English.

Results—On Ballot A, the majority of the pupils checked the correct trait for the main person in each poem. Poems numbered 8, 6, and 10 on Ballot B were enjoyed least. Of the 435 pupils, 164 chose "Little Black-Eyed Rebel" (Number 9) as the one liked best, while 164 others chose "The Highwayman" (Number 2). No particular differences were shown for grades or for I.Q.'s. Girls did not like poems of war and conflict. They preferred heroines to heroes. Forty-eight percent of the boys, but only 26 percent of the girls wished to be like Goethals, while 7 percent of the boys and 29 percent of the girls wished to be like the Tyrol maid.

BALLOT A POEM NUMBER _____

NAME OF PUPIL _____ SCHOOL _____

AGE _____ GRADE _____ SEX _____

DIRECTIONS:

1. Underline the word YES or the word NO in answer to the following questions:

   YES NO Did you enjoy hearing this poem read?
   YES NO Would you like to read it yourself sometime?

2. Mark an X opposite the group of words below which tells what you think about the poem just read.

   ____ One of the most interesting poems I ever heard.
   ____ A good poem. I like it better than most.
   ____ Not very interesting.
   ____ I do not like it.

3. Underline the ONE word which describes best the main person in the poem. Definitions are given to help you in choosing the right word.

USEFUL	Unselfish, glad to work hard or to give up whatever is necessary in order to help or to serve people.
COURTEOUS	Respectful, thoughtful and considerate of people, having pleasant manners.
LOYAL	Faithful and devoted to one's friends, companions, or to other people.
SELF-CONTROLLED	Reserved, restrained, master of one's feelings or wishes at all times.
TRUSTWORTHY	Dependable, reliable, deserving responsible positions or tasks, true to a trust one may be given.

4. Underline the WORD OR PHRASE which tells how you feel toward the main person in the poem.

   I DO NOT LIKE the person.

   I ADMIRE the person.

   I WISH TO BE LIKE the person.

FIGURE I—FACSIMILE OF BALLOT A

BALLOT B

NAME OF PUPIL _____ SCHOOL _____

AGE _____ GRADE _____ SEX _____

DIRECTIONS: Read the following facts about each poem before writing the items asked for at the bottom.

	NAME OF POEM IS:	MAIN PERSON IS:	STORY IS ABOUT:
1.	"Goethals, the Prophet Engineer"	Goethals	Goethals and the mountains in Panama.
2.	"The Highwayman"	Bess, the landlord's daughter	Redcoats at the inn, and the highwayman.
3.	"Incident in the French Camp"	The soldier	Napoleon's messenger at Ratisbon.
4.	"The Service"	The third man	The race, and the man who won third place.
5.	"The Legend of Bregenz"	The Tyrol maid	The night ride home to Bregenz.
6.	"The Listeners"	The traveller	The traveller who found nobody home.
7.	"Little Giffen of Tennessee"	Little Giffen	The soldier who went back to the fighting.
8.	"Winged Man"	The winged man	The man who flew and fell.
9.	"The Little Black-Eyed Rebel"	Little black-eyed rebel	The letters and the apple-wagon.
10.	"The Minstrel Boy"	The minstrel boy	The old-time minstrel and his harp.

a. Write the name of the poem you like best of the ten.

_____

b. Write the name of the poem you like least of the ten.

_____

c. Write the name of the person you admire the most of all those in the poems.

_____

d. Write the name of the person you admire the least of all those in the poems.

_____

FIGURE II—FACSIMILE OF BALLOT B

Conclusion—Nearly all the pupils found these poems narrating the adventures of heroes to be interesting. A majority were able to discern and check the principal trait of each hero. However, there is no assurance that the poems caused these pupils to develop any particular attitudes, or sufficiently emotionalized their attitudes to make them *act* like the hero, even tho they said they *wished* to be like him. Nevertheless, when we know which poems grip the interest of pupils, and know that pupils can discern the desirable traits of their heroes, we are able to select those poems which are *most likely* to emotionalize the particular attitudes we desire to strengthen.

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CHAPTER V

APPRAISING METHODS OF LEARNING AND TEACHING

EDITORIAL COMMENT

THE APPRAISAL OF METHODS of learning and teaching is a peculiarly difficult task. Altho teaching procedures have probably received more scientific study than any other aspect of education, the results obtained have often been conflicting and of doubtful validity. Research workers are beginning to suspect that there is no *best* method of teaching in many fields. The relative effectiveness of different methods may depend considerably upon the personalities, abilities, and previous experiences of teachers and pupils. However, some methods are undoubtedly better than others in specific situations. These considerations indicate that while teachers and principals may properly accept *as hypotheses* the conclusions of careful research conducted by others, they should test these hypotheses thoroly in their own schools.

The experimental technic has been the most widely used in recent years for appraising methods of teaching. This technic, while theoretically the most scientific, has certain limitations: (1) Influential factors other than the teaching procedures being appraised are difficult to control; (2) the conclusions of an experiment may apply to most of the pupils or teachers included, but not to certain individuals; and (3) many schools are not large enough to provide the equivalent groups of pupils required. Altho the experimental technic should probably be used wherever feasible, its results must be carefully interpreted. In addition, case-study procedures may be employed to evaluate methods of teaching for those exceptional pupils (or teachers) who do not succeed by the generally effective methods.

The seven articles in this chapter illustrate appraisal in several areas of instruction. Pistor describes an experiment comparing progressive and traditional school practises by the observational technic. Hardy presents the procedures and results of an experiment with different methods of health education. Worlton emphasizes reading objectives, and shows how each phase of the program may contribute to them. Dawson tells how she tried out a program combining unit teaching, differentiated assignments, and remedial work. Traxler reviews the procedures used in appraising remedial reading in a seventh grade.

In the sixth article, Dickey reports his experience with apparatus in teaching the division of fractions. The last article, by Kilzer, presents several devices for appraising supervised study.

The references listed on page 433 contain additional suggestions for evaluating methods of learning and teaching.—*Editorial Committee.*

EVALUATING NEWER SCHOOL PRACTISES BY THE OBSERVATIONAL METHOD

FREDERICK PISTOR

Department of Education, New Jersey State Teachers College, Newark, New Jersey

THE OBSERVATIONAL METHOD has been widely used with infants and preschool children. By this method the child's spontaneous behavior is watched and recorded. No attempt is made by the observer to get a specific response; he takes notes on whatever behavior attracts his attention. An improvement in this procedure has been made in recent years. It consists of controlling the observer by limiting and defining the traits he is to look for. More recently the length of the period of observation has been determined for various types of behavior. Olson [1] reports a method of observational measurement of nervous habits, using as a unit of measurement one manifestation of the designated behavior per stated unit of time. By the use of carefully defined categories of overt behavior, relatively short time-samples, repeated observations, and systematic recording, he attempted to measure certain characteristics of children thru direct observation. The adaptability of this method to a variety of behavior traits has also been illustrated by Goodenough.[2]

The observational method of research as improved by various workers has not been used widely in evaluating the work of the public school. This has been due to two chief reasons: (1) The improved observational technics are so new that not enough time has elapsed to permit their use and application in the schools. (2) The nature of the work in the majority of public schools has not encouraged the use of the observational method. Most of the conventional activities of school children have been limited to listening, reading, writing, and reciting at their desks. Where there are some physical and social activities in the school, these have usually been so directed and controlled by the teacher that pupils have not manifested trait-actions which are indexes of their real personalities. Even in many schools having activity programs, there are few or no opportunities to observe the *natural* behavior of children.

In recent years Wrightstone[3] has developed some codes for observation of social behavior to be used in appraising newer practises in selected public schools. His codes were used by trained observers who

[1] Olson, W. C. *Measurement of Nervous Habits in Normal Children.* Minneapolis: University of Minnesota Press, 1929. 97 p.

[2] Goodenough, Florence L. "Measuring Behavior Traits by Means of Repeated Short Samples." *Journal of Juvenile Research* 12: 230-35; 1928.

[3] Wrightstone, J. Wayne. *Appraisal of Newer Practices in Selected Public Schools.* New York: Teachers College, Columbia University, 1935. 117 p.

recorded the manifestation of each activity next to the name of the pupil who engaged in it. During the total period of observation each pupil was found to engage in the various acts a certain number of times. This number became a quantitative index of pupil participation.

In 1929, after several years of informal experimentation in observing and recording trait-actions, the present writer developed and used a similar code with children of the intermediate grades in the experimental school at Ball State Teachers College, Muncie, Indiana. This article describes the use of this code in appraising progressive school procedures during a period of four years.[4]

PURPOSE AND GENERAL PROCEDURE

The purpose of this study was to measure the growth of fifth- and sixth-grade children working under experimental conditions commonly found in progressive schools. Two equated groups of children were studied. Group 1 consisted of pupils who enrolled with the writer as their teacher for fifth-grade work in September 1929. These children came from the city school which was abandoned when the laboratory school was opened. They had spent four years in Grades I, II, III, and IV of the city school, where they had received a conventional type of education. They remained with the experimenter for two years as fifth- and sixth-grade pupils. Group 2 consisted of children who had spent two years as first- and second-grade pupils in the city school, and who were received by the laboratory school as pupils beginning the third grade in September 1929, when the city school was abandoned. These children were taught by one of the laboratory school teachers for two years in the third and fourth grades. In September 1931, they were promoted to the classroom of the writer, where they were pupils for the next two years in the fifth and sixth grades. The important difference between the two groups was the nature of their school experience while in Grades III and IV.[5] Group 1 had no progressive-school experience prior to the fifth grade, while Group 2 had two years of progressive-school experience in the third and fourth grades of the experimental school. Twenty-nine pupils were studied in each group.[6]

Comparisons were made between the two equated groups while they were in Grades V and VI in terms of specific objectives in personality

[4] Based on: Pistor, Frederick. *A Comparative Study of the Growth of Children Under Traditional and Progressive Practices.* Unpublished doctor's thesis. New York: New York University, 1933. 204 p.

[5] Other possible variables of minor importance are considered in the author's original document.

[6] Only those pupils who were enrolled during the entire period of experimentation and who could be matched readily for the purpose of equating the groups were studied. In Group 1 twenty-eight children were eliminated, and in Group 2 fourteen.

development. These objectives were in the form of thirty-eight trait-actions. The purpose of these comparisons was to determine which of the two groups had had the superior education prior to the fifth grade, and during the fifth and sixth grades, as measured by the methods used.

EXPERIMENTAL LEARNING CONDITIONS

Aims of the teacher—In the experimental school, no planned-in-advance courses of study in the customary subjects of the elementary curriculum were followed. Instead, the pupils were encouraged and helped to set up worthy objectives, to plan ways of accomplishing these objectives, to execute their plans, to evaluate procedure and modify it when necessary, and to judge the results of their activities. In carrying out this work the following aims determined the role of the teacher:

1. To develop the individuality of the child as completely as possible so he will have more wisdom with which to appraise the social order and to cooperate in remaking it.
2. To build intelligent, conscientious, self-directing personalities that will follow their best insight against anything else, being at the same time, however, duly impressed with their own fallibility, and with the essential need of cooperating to the common good.[7]
3. To have the children learn methods of securing group action, of controlling group living, and of organizing experiences so that they can become increasingly independent in habits of study.
4. To develop the power of independent reasoning, rather than to build up an accumulation of memory material.
5. To help the children develop a technic of research which will make them increasingly independent in habits of study.
6. To encourage the children as a group to seek out and use the special interests, aptitudes, gifts, and abilities of members of the group, in order to help each child realize his possibilities and in order to enrich the experiences of the group.
7. To allow the children to experience joy in creating. Experience resulting from keen interest on the part of the pupils is valuable regardless of the merit of the thing created. Technic is not an end in itself, and as such it should not be emphasized. Originality in technic is desirable.

Types of work units—The children were helped in selecting and planning units of work, which were of the following four types:

1. Studies of the environment, consisting of activities which called for a re-synthesis of subjectmatter from the more vital phases of the conventional content subjects.
2. The creative arts, consisting of activities dominated by the play impulse, and utilizing aspects of music, fine arts, dramatics, literature, writing, and construction. These activities were often related to the study of the environment, but were just as often unrelated to any other enterprise.
3. Maintenance and self-government activities, which were the children's attempts to assume responsibility for the recurring affairs of the day. In seeking better ways of planning and performing their duties, the children carried on much first-hand experiencing and continuous reference reading. The duties were performed by twelve committees.

[7] Adapted from a statement made by W. H. Kilpatrick at the December 1931 session of the Cleveland Conference.

4. The tool subjects, which were considered as byproducts of the units of work in the other three fields. They included the specific learnings in reading, language, spelling, penmanship, and computation which were needed in the other activities of the children.

. *Planning and selecting specific units*—The units of work were selected in various ways, as follows:

1. The teacher began with no definite idea for the unit, either as to subject-matter content or methods of carrying it out. He listed the suggestions for a unit made by the pupils and helped the children prepare lists of possible contents for the proposed units. These contents were in the form of things to do, places to visit, and questions to answer. Each group presented to the whole class for its consideration a proposed unit and its possibilities. As this went on, the teacher called the attention of the pupils to criteria for selecting a worthwhile unit. As the attention of the class gradually focused on the units which seemed most worthwhile, the activity of sponsors for units based on cursory, temporary, and capricious interests subsided. After several days of campaigning, the final selection was made by class vote.
2. The teacher began with no definite idea for the unit. He listed the suggestions of the pupils, which were immediate or remote experiences of interest. As these suggestions were made, the teacher led the group to explore them. In so doing, he was able to determine the intensity of group interest in a particular suggestion. When enough incipient interest was manifested toward a proposed unit, the teacher attempted to arouse activity with respect to the unit. If the interest subsided, the teacher turned to another suggested unit and repeated the process of orientation. Thru a period of several weeks there emerged a permanent interest which the teacher capitalized into a unit of work.
3. The teacher selected and prepared a unit in advance because he believed it fell within certain areas in which the genuine interests of children at that age are usually located. He suggested the unit and showed its possibilities to the class, permitting the group to suggest its own ways of carrying out the project. When tentative plans were completed, each child was permitted to vote for or against the plans. If not enough children voted for the plans, the latter were either modified or the teacher suggested another unit.
4. The teacher selected and prepared a unit in advance after examining the previous educational experience of the group and deciding that the unit was necessary to give richness or breadth to their experience, or to fill what appeared to be important gaps. He suggested the unit, outlined its possibilities, and led the pupils to give reasons why it should be undertaken. These reasons were often similar to his own. Tentative plans were made cooperatively, and the group was given opportunity to vote for or against the unit.
5. Short-time and minor units were selected less formally and in proportionately less time.

THE TECHNICS OF APPRAISAL

Equating the groups—Since the experimental traits were intricately dependent upon many factors, it was considered best to equate the groups on as many bases as possible. The data used for this purpose represented the period when the children were in the first month of the third grade. Table 1 shows that the two groups were practically equal in mental age, motor ability, home training, home surroundings, and social qualities. In chronological age and educational achievement, Group 1 was slightly superior.

TABLE 1—MEAN SCORES OF THE TWO GROUPS ON SEVEN FACTORS AT BEGINNING OF EXPERIMENTAL PERIOD

FACTORS	GROUP 1	GROUP 2
(1)	(2)	(3)
1. Mental age (in months)[a]	109.7	109.1
2. Chronological age (in months)	102.6	99.8
3. Motor ability[b]	37.4	37.8
4. Social qualities:		
Cooperation[c]	3.2	3.1
Initiative[c]	2.7	2.5
Popularity[c]	3.9	3.8
5. Home training[d]	3.9	3.8
6. Home surroundings[d]	21.6	21.1
7. Educational achievement[e]	15.8	13.9

[a] As measured by the *National Intelligence Tests*, Scale A, Form 1 (published by World Book Co., Yonkers-on-Hudson, New York).
[b] As measured by the Brace *Scale of Motor Ability Tests* (published by A. S. Barnes and Co., New York City).
[c] As measured by independent ratings of pupils by five workers.
[d] As measured by independent ratings of pupils by three workers.
[e] As measured by the *Stanford Achievement Test*, Primary Examination, Form A (published by World Book Co., Yonkers-on-Hudson, New York).

Selecting trait-actions to be measured—The thirty-eight trait-actions referred to above were selected according to their frequency of occurrence in pupil activities, ease of being observed in the classroom, ease of being culled from stenographic records, agreement with class objectives, and agreement with the principles and practises of progressive schools. In order to validate the trait-actions on the last-mentioned basis, they were submitted to 100 educators identified with progressive education. Each of these educators was asked to vote "Yes" or "No" on each trait-action according to whether or not he believed that encouraging fifth- and sixth-grade children to perform the action would help to develop a certain general trait, such as "initiative," "work spirit," "reliability," and so forth. Returns were received from seventy-three of these judges, and their responses may be summarized as follows:

Number of judges voting "Yes"	*Number of trait-actions*
73	5
72 or more	12
71 or more	20
70 or more	28
69 or more	32
68 or more	33
66 or more	35
58 or more	36
56 or more	37
48 or more	38

A complete list of the trait-actions as they were classified for use in the experiment is given later in this article.

Scheduling the observation periods—The classroom activities of the children while they were in the fifth and sixth grades were observed during regularly recurring periods comparable in length and type of activity. These observation periods were distributed thru each semester in such a way that the work of every alternate two-week period was measured. There were four such periods in each semester, and a total of eight in each year.

The two-week observation periods included six different types of pupil-activity periods. These six types, and the frequency with which they were observed, were as follows:

Type A—Practise or drill periods	Twice a week
Type B—Conference periods	Twice a week
Type C—Problem-solving periods	Three times a week
Type D—Creative work or construction periods	Three times a week
Type E—Directed study or research periods	Three times a week
Type F—Before-school periods	Six times a week

Of the nineteen pupil-activity periods observed in any single week, four were thirty minutes in length, nine were fifty minutes in length, and six were about fifteen minutes in length. In order not to interfere with the flexibility of the school program, some activity periods were not observed during the week. This margin of time also took care of special events or holidays which occasionally broke into a school week.

Recording the trait-actions—Two types of workers recorded the trait-actions as they occurred in the classroom activities of the children, namely, trained observers and stenographers. The observers were equipped with mimeographed seating charts of the class. Under the name of each child on the chart were spaces in which the observer entered code letters for the trait-actions as he observed them. Each observer had a list of from six to nine trait-actions in order to know what to look for. These lists differed according to the type of period being observed, but were not mutually exclusive. Following are the six lists used in the experiment:

PERIOD TYPE A

Practise or Drill Period—Two Times a Week

Code Letter	
W2[8]	Completing work sooner than others and not using time wisely.
W3	Depending upon unnecessary help while working.
W4	Not concentrating deeply upon work which requires close attention.
R2	Not working as efficiently when the teacher leaves the room or is not nearby.

[8] W2 is the code letter for the second negative trait-action listed under the general trait, Work Spirit. The other letters and their significance are: R-Reliability, C-Cooperation, P-Courtesy, H-Housekeeping, N-Initiative, and X-Work Spirit positive trait-actions.

P1 Carrying on conversation with neighbors when attention should be given elsewhere.
P2 Touching or borrowing property of other children without their permission.
H2 Letting materials or paper remain on the floor.
H5 Written work not neatly arranged, legible, or free from blots and eraser marks.

PERIOD TYPE B

Class Conference Period—Two Times a Week

N1 Suggesting an activity or problem for group consideration and undertaking.
N2 Suggesting possible ways of carrying out an activity or a method of solving a problem.
N3 Suggesting advantages and disadvantages of a contemplated or executed procedure.
N4 Volunteering to be chairman or a member of a committee.
N5 Criticizing work by bringing out good points or by offering suggestions for improvement.
X5 Volunteering in emergencies for extra work which will be for the good of the group.
P3 Not being courteous when speaking to others.
C3 Refusing to help others when help is necessary.
R3 Not holding oneself responsible to others for conduct.

PERIOD TYPE C

Problem-Solving Periods—Three Times a Week

N1 Suggesting an activity or problem for group consideration and undertaking.
N2 Suggesting possible ways of carrying out an activity or a method of solving a problem.
N3 Suggesting advantages and disadvantages of a contemplated or executed procedure.
N6 Asking questions of other children in order to understand their reports more fully.
N10 Defending a point which appears correct to the child even when the majority differ.
X1 Bringing in voluntarily from home or elsewhere, news clippings, books, or selections containing appropriate material to be shared with others.
X2 Engaging voluntarily in art, construction, or experimentation at home or elsewhere, and bringing in the results for class consideration.
X3 Bringing in voluntarily pictures, samples, or exhibits from home or elsewhere, to explain or to show to the class.
P3 Not being courteous when speaking to others.

PERIOD TYPE D

Creative Work or Construction Periods—Three Times a Week

N3 Suggesting advantages or disadvantages of procedure.
N5 Criticizing work by bringing out good points or by offering suggestions for improvement.
N6 Asking questions of other children in order to understand their reports more fully.
N7 Asking the teacher for help when the work is not understood.
N8 Showing evidences of leadership in group work.
N9 Carrying out an original idea in art, construction work, or experimental work. (*Original* here means original to the child.)
C1 Bossing others in the group.

C2 Exhibiting actions which interfere with carrying forward the purposes of the group.
C3 Refusing to help others when help is necessary.

PERIOD TYPE E

Directed Study or Research Periods—Three Times a Week

The trait-actions used for this type of lesson were identical with those listed under Period Type A.

PERIOD TYPE F

Before-School Periods—Three Mornings a Week, 8:00-8:30, and Three Noon Periods a Week, 12:45-1:00

Mornings:

R1 Not performing assigned or selected maintenance duties.
H4 Not returning books, tools, and materials clean and undamaged.
X4 Engaging in voluntary work for the class after school or on Saturday.
H3 Not keeping a clean, orderly locker.
W1 Not using spare time wisely at the beginning of a session.
W5 Not being prompt in getting materials, in organizing them for work, and in getting started.

Noon periods:

R1 Not performing the assigned or selected maintenance duties.
H1 Not keeping books and materials neatly arranged in desks.
W1 Not using spare time wisely at the beginning of a session.
W5 Not being prompt in getting materials, in organizing them for work, and in getting started.

Periods providing silent evidence of trait-actions—Two kinds of evidence were used by the observers in recording trait-actions. One consisted of the physical actions of the pupils or the results of such actions; the other was the oral expression or conversation of the pupils. In lessons of the A, E, and F types, the interpretation of pupil behavior depended largely upon silent evidence. Therefore it was not necessary to use a stenographer. Instead, two observers worked simultaneously but independently. In lessons of the B, C, and D types the evidence was largely oral. Stenographers and observers in combination were used for such periods.

In the A periods the pupils practised and drilled themselves in spelling, language forms, accuracy and speed in computation, processes in arithmetic, arithmetic problems, and geographical locations. As a rule, the pupils sat in their seats and worked independently, altho occasionally two or three of them would sit together at a table to drill each other on special material.

During the E periods the pupils sat at their own places to study common material, either in books or on specially prepared study sheets; or they consulted various books on the classroom library shelves; or they used the time not in studying books, but in connection with some laboratory work or with something seen on a field trip. When the chil-

dren got out of their seats their identity was not lost to the observers, since the names of the pupils were learned by the workers. When observers or children were new, identification disks were worn by the children.

The F periods of observation were conducted largely while the children were not in school, altho the observers continued to watch the children as they came into the classroom at the beginning of the morning and afternoon sessions.

Periods providing oral evidence of trait-actions—As stated above, the B, C, and D periods were attended by both observers and stenographers. The B periods were conference periods in which the children met to discuss the affairs of the group, including maintenance work, self-government work, and plans for various activities. At that time individual points of view were brought together, and concerted judgment and action were arrived at. The C or problem-solving periods were usually class meetings during which the children considered one or more challenging problems arising in the course of their activities. These problems represented various subjectmatter fields: geography, arithmetic, history, industrial studies, science, and many others. The D periods were creative work or construction periods, in which the children individually or in groups attempted to embody some idea in concrete form. This activity included creative work in music, writing, literature, and art, as well as less original work in manipulating and constructing.

When small groups met to work together in various parts of the room, it was necessary to have two observers and a stenographer for each group. The stenographers used numbered seating charts for rapid identification of the pupils. They did not bother with the lists of trait-actions. They took down the words of each child and supplemented the dialog with comments on the actions of the pupils, the materials with which they dealt, and other useful data. When the stenographic reports had been typewritten, they were passed to another group of workers, the interpreters.

Interpreting the stenographic reports—The stenographic reports of the children's work were interpreted by pairs of workers who culled the trait-actions from the manuscripts. These interpreters used the same lists as the observers, and examined the manuscripts of lesson-types B, C, and D for evidences of the trait-actions. When an interpreter found a sentence or group of sentences which indicated a particular trait-action, he recorded the child's name and the trait-action in code on a strip of adding machine paper. Each interpreter worked independently.

When the reports of two interpreters were completed, they were compared with each other and with the reports of the two observers. This was done for each lesson. It was found that the observers and the interpreters agreed rather closely on many of the trait-actions. The reliability of the workers' judgments was determined by comparing the reports of different workers.[9]

Tabulating the trait-actions—The trait-actions recorded by observers in the A, E, and F periods were entered in the final tabulation only if they were reported by both the observers in the same lesson. The trait-actions recorded in the B, C, and D periods by the observers and a stenographer were not counted in the final tabulation unless they were reported by at least two of the four workers (the two observers and the two interpreters of the stenographic record). No trait-action was included in the final tabulation if it was reported by only one worker.

SUMMARY OF RESULTS

Four different comparisons were made between the two groups of pupils with respect to the trait-actions exhibited: (1) a general comparison for the two-year period during which these pupils were in the fifth and sixth grades; (2) a comparison for the first two-week measuring period in the fifth grade; (3) a comparison for the last two-week measuring period in the sixth grade; and (4) a comparison of the progress made by the pupils during the two-year period. In addition, the two groups were compared with respect to their performances on standardized achievement tests during the two-year period.

Comparing the groups with respect to trait-actions—Space does not permit a detailed presentation of the findings in regard to the trait-actions exhibited by the two groups of pupils; only a few general statements can be made at this point. Group 2, consisting of the pupils with two previous years of experience under the experimental learning conditions, was found superior to Group 1 in all of the trait-actions, as measured by the average number of manifestations reported for each pupil during his two years in the fifth and sixth grades. In all except four of the trait-actions, the differences were large enough to indicate that similar results would almost certainly be obtained if the experiment were to be repeated with other groups under similar conditions.

Since the two groups at the beginning of the fifth grade differed with respect to their previous school experience—Group 1 having attended the third and fourth grades in a traditional school, and Group 2 having attended the same grades in the experimental school—it was believed

[9] Pistor, Frederick. *op. cit.*, p. 63-66, 114-15.

that some differences might be noted in the trait-actions manifested by the two groups at the beginning of the fifth grade. Hence, the average numbers of manifestations reported for the groups during the first two-week measuring period were compared. In this comparison the averages for the experimental group were superior to those for the traditional group in nearly all the trait-actions, but in many cases the differences were too small to be considered significant. Of the thirty-four trait-actions considered, fourteen showed significant differences in favor of the experimental group, while none showed significant differences in favor of the traditional group. The small number of significant differences revealed by this comparison may be attributed partly to the small number of trait manifestations reported during a single period of two weeks.

While both groups showed improvement between the first and last observation periods, the experimental group made the greater amount of growth in positive trait-actions. No adequate comparison of growth in negative trait-actions could be made because the experimental group showed such a consistently excellent record with respect to them thruout the two years of observation.

Testing academic achievement—The pupils of both groups were also tested in achievement when they were in the first month of Grade V, the first month of Grade VI, and the ninth month of Grade VI. The results of these tests show that the pupils in the experimental group did somewhat better, on the whole, than the pupils in the traditional group. Table 2 gives the average grade scores of the two groups in individual school subjects and in all subjects combined, in terms of norms for traditional schools.[10]

This table indicates that each time the tests were administered, Group 2 (experimental) made a higher average score than Group 1 (traditional) in every subject except dictation (spelling), altho some of the differences were small. Group 2 was also superior in all subjects combined, the differences ranging from four months at the first testing to nine months at the second testing. This second difference was large enough to make it practically certain that a repetition of the experiment with other groups under similar conditions would yield results in favor of the experimental group.

[10] It has been found that the norms for progressive schools when measured by traditional-school testing instruments tend to be lower than those for traditional schools in such subjects as spelling and arithmetic computation, and higher in such subjects as reading and geography. However, no attempt was made in the writer's study to apply progressive-school norms; the two groups of pupils were compared only in relation to the traditional-school norms. In the writer's judgment, it would be fairer when testing the efficiency of the two types of schools, to compare them in relation to the norms established for *each* type of school. However, since progressive-school norms had not been fully established in 1933 (the year of the original report), the author made comparisons only with reference to the norms for traditional schools.

In general, both groups did better than the typical class in a traditional school, and both improved in their ability to exceed the traditional norms. Group 2 made the greater improvement in this ability.

TABLE 2—AVERAGE GRADE SCORES OF THE TWO GROUPS ON TESTS OF ACADEMIC ACHIEVEMENT

SCHOOL SUBJECTS	SCORES [a] ON TESTS [b] GIVEN IN:					
	FIRST MONTH OF GRADE V		FIRST MONTH OF GRADE VI		NINTH MONTH OF GRADE VI	
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Reading	5.5	5.6	6.7	7.2	7.8	9.0
Dictation	4.6	4.6	6.0	5.7	6.4	6.4
Language usage	6.0	6.2	5.4	7.6	8.1	8.4
Literature	4.9	5.9	5.8	7.8	6.4	7.6
History	4.7	4.9	5.9	7.0	6.4	7.4
Geography	4.9	5.5	6.7	7.5	7.9	8.5
Hygiene	4.5	5.5	6.2	6.3	6.8	7.9
Arithmetic	4.6	4.9	6.1	6.7	7.2	8.4
All subjects combined	5.0	5.4	6.1	7.0	7.1	7.9

Read table: On the test given in the first month of Grade V, Group 1 made an average grade score of 5.5 in reading, while Group 2 made an average score of 5.6 in the same subject. Similarly read figures for other subjects, and for the later testing periods.

[a] The grade score is the equivalent of the average point score made by a large, typical group of pupils at the grade level indicated. Thus, a grade score of 5.5 represents the average point score made by a representative sampling of pupils in the fifth month of Grade V.

[b] The test used for these comparisons was the *New Stanford Achievement Test*, Advanced Examination, Forms V, X, and Z (published by the World Book Co., Yonkers-on-Hudson, New York).

ADVANTAGES AND LIMITATIONS OF THE OBSERVATIONAL TECHNIC

The observational method of measurement used in this study has both advantages and disadvantages as a means of appraising a school program. Its chief advantage is that it provides a direct measure of pupil functioning in the classroom society. The pupil is judged in terms of actual samples of his behavior. None of his time is taken from his regular classroom work. In fact, he usually does not know that he is being tested. The method is essentially one of simple counting, and the results can be expressed quantitatively. Temporary fluctuations in a pupil's behavior have little influence upon his total score if the observing is done on many different days.

On the other hand, the method is a time-consuming and costly process, and this fact limits its general use somewhat. Moreover, in a long-continued appraisal, the observer may change during the period of ob-

servation. Certain practise effects may enter into the recording; the personal bias of the observer may color the results; variations in recording may be produced by other factors. All these sources of error can be guarded against if the experimenter tests his workers and their reports for reliability, but this requires time and considerable technical knowledge. Unfortunately, the standards used and the results obtained in a specific situation cannot be generally applied to other schools. Results obtained thru the use of observational methods must be interpreted in terms of situations of which they are typical.

The observational technic seems to be particularly suited to schools in which an unusual amount of physical and social activity is encouraged. Since the method is probably applicable to behavior traits of many different types, and since the program of the activity school permits much more natural activity than does that of the conventional school, it is reasonable to believe that investigators in the activity-school field will find the method most profitable.

FROM WITHIN THE RANKS of progressive education has now come a call for the appraisal of the newer values in education. The question is: How can we measure such values, or aspects of such values, in the educative process? The answer is still in a tentative state, but efforts to measure personal and social attitudes and conduct are being made. New techniques are being devised for diagnosing social conduct. They are techniques of direct observation of defined units of behavior. These newer instruments of diagnosis and measurement have enjoyed a promising growth in a relatively short period of time. They are, nevertheless, still in experimental stages of development and will undoubtedly be revised and refined by experience and criticism.—Wrightstone, J. Wayne, in *Progressive Education*, February 1935, p. 95.

APPRAISING METHODS OF HEALTH EDUCATION

MARTHA CRUMPTON HARDY

Staff Psychologist, Elizabeth McCormick Memorial Fund, Chicago, Illinois

FOR A NUMBER OF YEARS the Elizabeth McCormick Memorial Fund has been interested in developing efficient and practical methods for health education. It has supervised teaching programs in public schools, nursery schools, special centers, and other institutions. This work has included programs which focused attention both on the child and on the adults who supervise the child's activities—parents, teachers, and housemothers. Recently the Fund has made an effort to appraise some of the methods used. This article reports the procedures and results of appraisal in the case of health education programs conducted during a three-year period in a number of public elementary schools in Chicago and Joliet, Illinois.

SCOPE OF THE APPRAISAL

The general aim of health education is to develop attitudes, habits, and knowledge on which good health depends. The immediate ends are an improved physical condition and the acquisition of health information and hygienic practises. Any method which achieves these objectives must obviously rely, to a large extent, upon individualized instruction. Hence, a careful physical examination of the pupils by a pediatrician, with one or both parents present, formed the hub around which revolved all the health education methods used in these projects.

The Chicago project—In the Fund's program in the Chicago schools, regular classroom instruction on health topics was given in Grades I thru VI for three consecutive years. This teaching was supplementary to periodic examinations by, and conferences with, the physician. At many of these conferences the principal was present. Frequent contacts between health specialists and the child, as well as consultation periods for teachers and parents, were special features of the plan. The Fund was fortunate in securing the services of a physician well trained in pediatrics and psychiatry for the duration of this project. An opportunity was thus provided for a broad program of health education. The groups of pupils included were predominantly white, and represented what may be called the average or middle socio-economic level.

The Joliet study—The Joliet project was set up as a research investigation of the influences of health education on the child's growth and development.[1] For the sake of expediency, the study was restricted to

[1] For a complete report, see: Hardy, Martha Crumpton, and Hoefer, Carolyn H. *Healthy Growth: A Study of the Influence of Health Education on Growth and Development of School Children.* Chicago: University of Chicago Press, 1936. 360 p.

pupils who were in the same grade (Grade III) at the beginning of the program. These pupils were followed as they progressed thru the later elementary grades. A number of methods were used to stimulate their interest in the principles of healthful living. These methods were similar to those previously described, and may be classified into three general categories: (1) specific instruction on health topics presented in the classroom; (2) information and recommendations given to the child, his parents, and his teachers, based on the findings of a pediatrician and a psychologist as to the child's present condition of health; and (3) individual conferences for the parents and school authorities with child specialists, and follow-up work by the school nurses.

The children included in the Joliet study were American-born white children mentally capable of doing third-grade work, whose parents were interested in cooperating with the schools in a long-term program. All pupils participating in the project shared equally in the physician's and psychologist's services, and in the follow-up work of the school nurses. Every home was visited at least twice by the Fund's representatives, and the teachers were regularly interviewed. For one group of 104 pupils the health instruction was restricted to these features of the program. Another group of 268 pupils participated in the entire health education program, including the classroom instruction. In addition, there were 37 pupils who transferred from one group to the other, thus having a limited contact with all aspects of the health work. Each of these three groups represents some combination of the different methods utilized in teaching the principles of health to elementary-school pupils.

Methods of measurement—The immediate outcomes of both the Chicago and Joliet projects were measured by means of yearly inspections of the children by a pediatrician, dietary histories covering the period of health instruction, and records provided by parents as to the amounts of medical and dental service obtained. Appraisal of the educational procedures employed has been made in terms of the changes reported in these several sources of information. The results are presented to show: (1) the effect of health education on physical condition and health practises, and (2) the relative efficacy of certain combinations of methods in health education.

GENERAL RESULTS OF THE HEALTH PROGRAM

The findings from physical examinations, whether taken singly or collectively, show that pupils who participated in the health instruction projects were in better health and were following a more hygienic schedule of living at the conclusion of the instruction than they were

before. Evidence of improvement was clear-cut and definite in the schools under observation.

Table 1 presents some of the major results of the physical examinations for those pupils who participated in comprehensive health programs. It summarizes the findings of the initial and final examinations, and the gains made during a three-year period, for both the Joliet and the Chicago pupils. These figures reveal an interesting similarity in the results from the two school systems. In both cities the frequency of specific types of physical defect was decreased, and the general health of the children was improved during the period of health instruction. At the time of the final examination the pupils generally were in better all-round condition, and fewer were reported as having infected tonsils, carious teeth, defects of eyes, and other defects, than at

TABLE—1—CHANGES IN HEALTH AND HEALTH PRACTISES OF PUPILS DURING A THREE-YEAR COMPREHENSIVE PROGRAM OF HEALTH EDUCATION IN TWO CITIES IN ILLINOIS

CONDITIONS AND PRACTISES	PERCENTAGE OF PUPILS SHOWING CONDITIONS LISTED IN COLUMN 1					
	JOLIET PUPILS (268)			CHICAGO PUPILS (421)		
	Before Health Program	After Health Program	Gain (Col. 3 minus 2)	Before Health Program	After Health Program	Gain (Col. 6 minus 5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
General physical condition good	51	85	34	28	62	34
Muscles firm	69	99	30	50	74	24
Posture erect	38	60	22	34	40	6[a]
Tonsils infected	45	24	21	65	44	21
Teeth with cavities	63	45	18	67	48	19
Ear defects	7	2	5	14	3	11
Dietary practises adequate[b]						
Milk	78	93	15	80	89	9
Cereal	62	87	25	..	..	..
Vegetables	67	93	26	..	..	..
Fruits	59	93	34	..	..	..
Sleep satisfactory	78[c]	88[c]	10	25[d]	72[d]	47

Read table: Of the 268 pupils participating in the health education program in Joliet, 51 percent were rated "good" or "very good" in general physical condition at the first examination, and 85 percent received such ratings at the last examination; thus the increase in the percent receiving such ratings was 34. Again, 45 percent had infected tonsils at the first examination but only 24 percent at the last, the difference showing a decrease of 21 in the percent having this type of defect. Similarly read figures for other items in column 1, and for the Chicago study.

[a] Sixteen percent showed marked improvement in posture, altho only 6 percent more had good posture the last year.

[b] According to standards given in this report.

[c] According to current standards for age.

[d] According to pediatrician's judgment of the child's needs.

the time of the first examination. Of the Joliet group, 85 percent were said to be in "good" or "very good" health [2] at the conclusion of the project, as compared with only 51 percent at the beginning. Of the Chicago pupils, 62 percent were in good general health at the final examination, as opposed to 28 percent at the first examination. In each case there was a gain of 34 in the percent of pupils who were in good or very good condition.[3]

Increase in health practises—Information concerning health practises was obtained from several sources. The results presented in the five lower rows of Table 1 are from answers given by the mother and the child to the pediatrician at the time of his regular examinations. On the whole, a decidedly more hygienic regimen was indicated after the program than before. This was evidenced particularly in the larger number of pupils taking vegetables, fruits, milk, and adequate breakfasts; in the smaller number taking coffee or tea; and in the smaller number getting an inadequate amount of rest. Complete results for these practises are given for Joliet only. The Chicago findings with regard to the use of cereals, vegetables, and fruits have been organized around the needs of the individual, and are not comparable to the Joliet data. Therefore, the former have been omitted from the table.

RELATIVE EFFECTIVENESS OF DIFFERENT PROCEDURES

Since the physical examination was utilized by the physician in instructing the mother and the child in the principles of healthful living, every pupil who was examined participated in this aspect of health teaching. Consequently, no real "control" group is available to determine the improvement in health and health habits which may be expected of pupils who receive *no* health education in the schools. However, the plan for the Joliet project makes it possible to evaluate, in a general way, the relative efficacy of certain procedures employed in health education. As previously mentioned, three groups of pupils had different amounts of contact with the classroom instruction on health topics. One group had no classroom instruction; a second had two or more semesters of such instruction; and a third had six semesters, or the complete program of instruction. These groups are hereafter re-

[2] The term "general physical condition" represents the physician's judgment of the health of the child at the time of examination, expressed in the form of a descriptive rating: "very good," "good," "fair," "poor," or "very poor." This rating gives a brief summary and evaluation of the detailed findings for each pupil. It was made at the completion of the doctor's examination and before the child dressed.

[3] With only two exceptions the gains shown in Table 1 are large enough to be considered "statistically significant"; that is, they are at least four times as large as their probable errors. This means that if the experiments were to be repeated with similar groups of pupils under similar conditions, the chances that no improvement would result are negligible. For detailed figures on the reliability of the Joliet results reported here, see: Hardy, Martha Crumpton, and Hoefer, Carolyn H., *op. cit.*

ferred to as the "non-instructed," "limited-instructed," and "extensively-instructed" groups.

Effect on health—On the whole, the non-instructed pupils were healthier than the other pupils at the time of the first examination. It should be mentioned that the physician was unaware of the classification of the pupils and gave equal attention to all cases. At the final examination the results were overwhelmingly to the advantage of the pupils receiving classroom instruction. This advantage appeared consistently, regardless of the ages and home conditions of the pupils. Among children of similar ages, physical conditions, and types of homes at the beginning of the program, those who participated in the extensive instruction were said to be healthier after instruction than were the non-instructed pupils, and the difference was highly reliable.

There is evidence that each of the methods used was to some extent effective in bringing about healthier conditions. In each group the children's general health appeared to be improved, and the number and types of defects somewhat decreased. A representative cross-section of a large array of findings showed that pupils given extensive health instruction made definite improvement in every item, all changes being large enough to denote certainty of trend. In 78 percent of the measures, the extensively-instructed pupils showed greater improvement than the limited-instructed pupils, who had improved in at least 44 percent of the health items. In turn, the limited-instructed pupils showed greater improvement than the non-instructed pupils in 67 percent of the items, the latter having improved in only 22 percent. The selected items included the physician's summary ratings on physical condition, measures of nutrition, muscle tone, posture, and condition of feet, the total number of remedial defects, and the adequacy of dietary and rest habits.

Correction of defects was strikingly evident among the children receiving regular health instruction. The average pupil participating in the instruction program had fewer types of remedial defects at the completion of the teaching, and some improvement within the different categories of defect had been made. For example, there were definite decreases in the number of children having visual defects uncorrected, infected tonsils and adenoids, enlarged thyroid gland, flabby muscles, poor posture, dental caries, and defects of the feet.

Remedial work among children of school age depends primarily on the parents—their appreciation of the importance of good health and freedom from defects, and their financial ability to have the necessary work done. The fact that corrections were made for some pupils in each of the three classifications implies an increased interest on the part of the parents in the health of their children during the progress

of the health education program. It is evident, however, that this increased interest was most pronounced among the parents whose children participated in the extensive instruction projects. When parents of the extensively-instructed pupils and those of the non-instructed pupils were equally able to pay for remedial work, a larger proportion of the former than of the latter had corrections made.

Some of the major findings of the physical examinations for the three groups of pupils are presented graphically in Figure I. The height of each column represents the increase in percent of pupils in good condition or having certain remedial work done between the first and third examinations. In each of the five health items represented in this chart, the extensively-instructed group gained the most and the non-instructed group gained the least.

Effect on health habits—The adequacy of dietary practises among the Joliet cases was determined from food requirements based on the generally accepted theory that the daily diet of growing children should contain the following types of foods: (1) from a pint to a quart of milk, preferably a quart; (2) cereals; (3) at least two vegetables in addition to potatoes, one of which should be a leafy vegetable; (4)

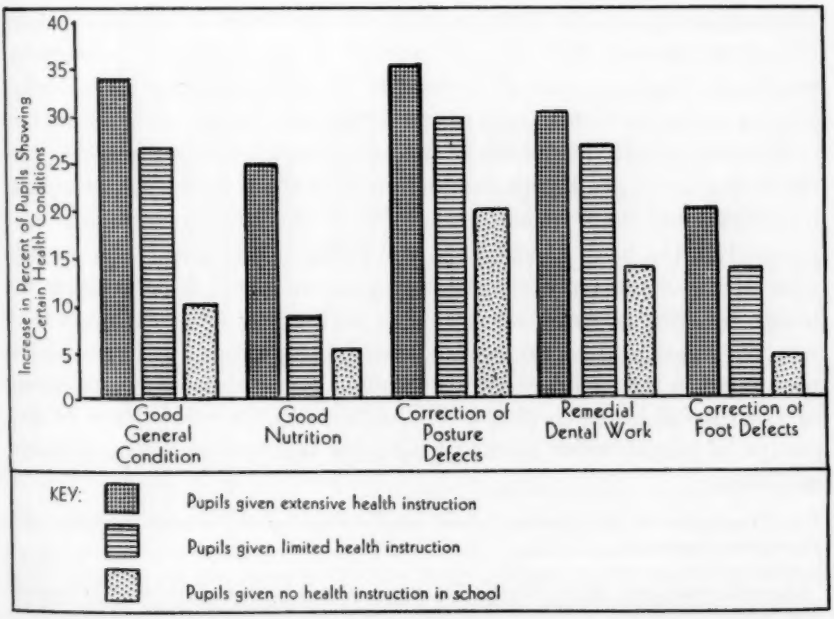

FIGURE I—HEALTH IMPROVEMENT OF PUPILS AS RELATED TO EXTENSIVENESS OF A HEALTH EDUCATION PROGRAM IN JOLIET, ILLINOIS, DURING A THREE-YEAR PERIOD

fruits; and (5) no tea or coffee. Adequacy of sleep was determined from current standards according to age.

Improvement in dietary practises was clearly shown for all food habits inventoried in the case of the extensively-instructed pupils. Increases in the percent of these pupils eating the recommended foods ranged from 15 to 34. In several of the food habits the limited-instructed pupils also manifested marked improvement. However, there was little assurance that the general dietary of the non-instructed pupils was more satisfactory at the conclusion of the investigation than before. Consumption of fruit was the only food habit surveyed in which the non-instructed children showed definite improvement. Thirty-nine percent more of the pupils in this group were getting some fruit each day during the last year than during the first year, according to the reports from the mother and from the child.

With respect to sleep, clear-cut evidence of an increase in the number of children obtaining adequate amounts of rest was noted in the case of the extensively-instructed pupils. Among pupils receiving limited instruction some improvement occurred, while the least amount of change during the three years was noted in the case of the non-instructed pupils. Marked differences between the groups were found when the factors of age, socio-economic level, general health, and adequacy of sleep at the time of the first examination were taken into consideration. Schedules showed that only 10 percent of the extensively-instructed pupils, as compared with 25 percent of the non-instructed pupils, were getting an insufficient amount of rest at the time of the last examination.

Effect on pupils' school work—An interesting altho indirect check on the influence of the health instruction projects is found in the results of educational achievement tests.[4] When the groups of pupils were equated on the basis of age, I.Q., and initial achievement, the average gain of the extensively-instructed pupils on school tests[5] during the health teaching program was larger in each of the school subjects than was the average gain of the non-instructed pupils. Further evidence was found in the scores of pupils who had no contacts with any aspect of the special health projects. The data permit a comparison of five groups of pupils under as many different instructional arrangements, as follows:

1. Classmates of the non-instructed pupils who had no special contacts with the Fund's program

[4] For full details, see: Hardy, Martha Crumpton. "Improvement in Educational Achievement Accompanying a Health Education Program." *Journal of Educational Research* 30: 110-23: October 1936.

[5] Kelley, T. L.; Ruch, G. M.; and Terman, L. M. *New Stanford Achievement Test*. Yonkers-on-Hudson, N. Y.: World Book Co.

2. Non-instructed pupils who had only the yearly examinations and conferences with child specialists
3. Classmates of the instructed pupils who had no examinations but who participated in all the instruction projects, and whose teachers had regular contacts with the health program in its entirety
4. Limited-instructed pupils who transferred from the instructed to the non-instructed classes or vice versa, and who had regular examinations and conferences
5. Extensively-instructed pupils who participated in the entire program.

Figure II shows the average gain in test scores during the program in terms of composite educational ages, for each of the five groups mentioned. It is evident that the pupils who participated in the classroom projects showed greater progress in their school work than did the non-participants. The classroom teaching of health topics in combination with other methods of health education appeared to be more effective than classroom instruction alone, but regular class instruction in the principles of healthful living seemed to be a greater stimulus to general school achievement than did contacts with health specialists at intervals of several months.

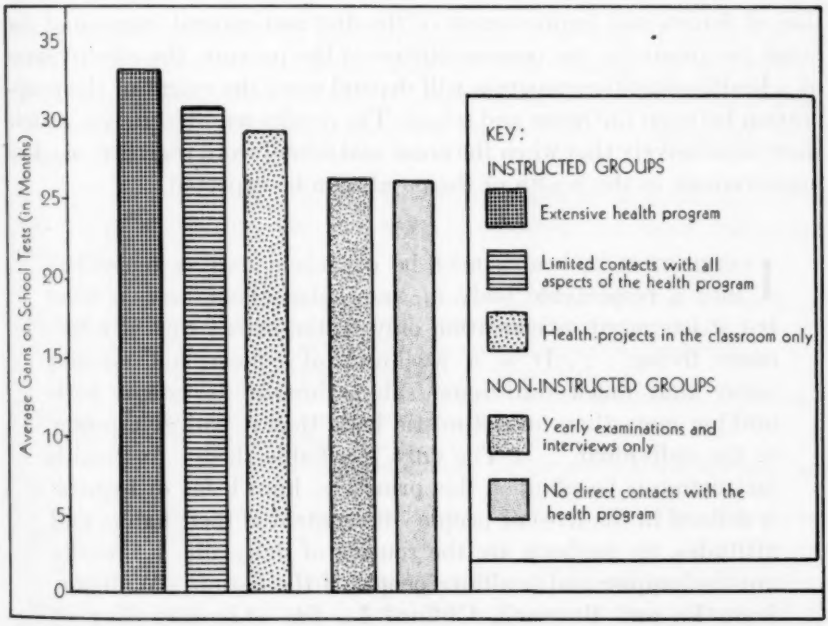

FIGURE II—IMPROVEMENT IN PUPILS' SCHOOL WORK AS RELATED TO EXTENSIVENESS OF A HEALTH EDUCATION PROGRAM IN JOLIET, ILLINOIS, DURING A THREE-YEAR PERIOD

SUMMARY AND CONCLUSION

From the findings reported above, it seems safe to conclude that specific classroom instruction on health topics, supplemented by periodic physical examinations with advice to parents, is an effective method of health education for elementary-school children. There is indication that yearly conferences with a physician will stimulate sufficient interest on the part of both parent and child to produce an appreciable improvement in the child's health. When such conferences are accompanied by health teaching in the classroom, this improvement is markedly increased.

These procedures seem to be effective, not only in improving the average child's general health, but also in correcting specific bodily defects and establishing better health habits. This improvement in health is in turn reflected in a higher level of school achievement. In accomplishing these objectives, a comprehensive program of health education is more effective than one or two procedures used alone. Moreover, the longer and more continuously health instruction is carried on, the more satisfactory the results are likely to be. Since the correction of defects and improvement of the diet and general hygiene of the home are primarily the responsibilities of the parents, the effectiveness of a health education program will depend upon the extent of the cooperation between the home and school. The results reported in this article show conclusively that when the home and school work together, marked improvement in the health of the pupils can be expected.

> INSTRUCTION in health may be organized and systematized into a respectable body of knowledge about how to live, but it has merit as education only to the extent that it influences living. . . . It is a weakness of educational method today that much traditional subject matter is taught with nothing more than an optimistic hope that it will give power to the individual. . . . The only justifiable theory for health instruction is based upon this principle: knowledge of hygiene is defined in the lives of people—its content is their habits and attitudes, its methods are the routine of daily life, its results are the happier and healthier people of the nation.—Williams, Jesse F., and Brownell, Clifford L., *The Administration of Health and Physical Education*, W. B. Saunders Co., 1934, p. 261-62. (Quoted by permission of the publishers.)

THE EVALUATION OF READING INSTRUCTION IN THE INTERMEDIATE GRADES

J. T. WORLTON

Assistant Superintendent of Schools, Salt Lake City, Utah

THE EVALUATION of reading technics in the intermediate grades requires first a clear identification of the objectives or purposes to be served in teaching children to read. This principle is more often ignored than applied in the construction of tests and other devices for evaluating instructional procedures. The practical difficulties encountered in attempting to measure pupil progress in the more fundamental aspects of education have been almost insurmountable. This article reviews some types of instruments and technics of appraisal which have been found advantageous in focusing the attention of children and teachers upon the important goals of reading instruction.

OBJECTIVES TO WHICH THE READING PROGRAM SHOULD CONTRIBUTE

The teacher's purposes in teaching reading may be classified under two major headings: (1) the fundamental objectives of education, and (2) those specific goals which seek to make reading an effective tool of learning and of recreation. A brief list of purposes of each type is presented here as a background for the methods of appraisal recommended.

Major educational objectives—Most teachers and principals will probably agree that the following are among the basic purposes of education:

1. To help the child understand the society in which he lives, and to develop in him an attitude of cooperation with others for the common welfare.
2. To encourage the use of the scientific method in solving problems.
3. To develop the individual personality of each child.
4. To develop a mastery of such skills and factual information as are necessary for effective participation in life activities.
5. To develop independence and power.
6. To develop an appreciation and a desire for the esthetic and spiritual values of life.
7. To establish a sound body, controlled emotional reactions, and desirable personal attitudes.

The writer believes that reading can and should be made to contribute to each of these general objectives. A later section of this article will indicate in a general way how such contributions may be made.

Specific goals of the reading program—No sooner does the teacher in the intermediate grades begin to seek the ultimate goals of educa-

tion thru reading activities than she becomes aware of certain handicaps under which her pupils are working because of their limited abilities and skills in the field of reading. These deficiencies must be overcome if the child is to enjoy the various experiences which facility in reading affords. Therefore, we have a second series of reading objectives—those which involve the mastery of desirable reading habits, tastes, abilities, and skills.

The typical pupil entering the fourth grade has a foundation on which the more mature reading technics can be developed. It is the responsibility of the intermediate grades to build upon this foundation a structure of reading skills and abilities which will enable the pupil to secure and enjoy the world of experiences locked up in printed symbols. Some of the more valuable of these specific reading objectives are the following:

1. To give the child a variety of experiences in the widest possible areas of human interest, including biography, history, science, art, travel, recreation, geography, music, and literature.
2. To increase the rate and comprehension of silent reading.
3. To develop skill in the use of library facilities.
4. To secure rapid growth in power and habits of effective study.
5. To develop the necessary abilities, skills, and tastes for effective oral reading.
6. To develop wholesome and permanent interests in reading.

It is not necessary that the reader accept as his own the educational objectives listed above, in order that the writer's present purpose may be achieved. The object in stating these goals is to emphasize the relationship which should exist between the objectives of reading instruction and the technics of appraisal used in evaluating the teaching methods and procedures employed to achieve those objectives.

APPRAISING SUCCESSIVE STEPS IN THE READING PROGRAM

Following is a description of a program for teaching reading in the intermediate grades which has been found effective in achieving not only the more specific reading skills and abilities, but also the fundamental purposes in education listed above. The tests and other methods used in measuring pupil growth and in appraising the instructional technics are described briefly with each phase of the work.

Preliminary activities—Certain preparatory activities must be performed by the teacher before the reading itself can begin. These activities cannot be formalized or routinized. They include the following:

1. The teacher determines the minimum essentials of achievement for the class as a whole, and plans an enriched program for the more able pupils. She calls upon her own experience and the experience of others in order to identify the probable requirements of her pupils, and

arranges alternate types of reading activities to meet the needs of the advanced pupils. The criterion for evaluating this important step is the subjective opinion of the teacher or other person making the appraisal. A study of the opinions of recognized authorities in reading is helpful in making sound judgments.

2. The teacher determines, thru the use of reading tests and other survey procedures, the general reading ability and the interests of the individual members of the class. There are a number of excellent survey reading tests[1] which will indicate the grade level in reading which the individual child has attained. A general achievement test such as the *New Stanford Achievement Tests*[2] or the *Metropolitan Achievement Tests*[2] will reveal not only the child's grade level in reading but also the relationship of reading efficiency to achievement in other subjects. The interests of individual pupils may best be determined from the give-and-take experiences of group life and from the teacher's personal interview with the pupil.

3. In a school having two or more classes in the same grade, the teacher groups the pupils as homogeneously as possible with reference to their reading needs. When the school program makes it impracticable to group pupils on the basis of reading needs, a classification based upon general success in academic subjects and upon social maturity is recommended.

The best subjectmatter tests to use for purposes of grouping are survey reading tests or general achievement tests such as those suggested above. The teacher's subjective opinion of the pupil's social maturity, health requirements, and other characteristics which are likely to affect his progress in reading should have a weight equal if not superior to that of test results in determining the class to which a pupil is assigned.

4. The teacher provides a rich variety of carefully organized reading materials, and classifies them according to the degree of difficulty or grade level of each. In addition to the basic reader, a copy of which should be supplied to each child, fifteen or more sets of readers with from three to five copies each should be available in the reading room. A miscellaneous set of fifty or more single titles would make a desirable addition.

As a beginning step in identifying the vocabulary difficulty of reading materials, the teacher should consult the graded booklists issued by reputable organizations. The *Graded List of Books for*

[1] For the titles and publishers of such tests, see the article by Traxler in this chapter.—*Editorial Committee.*

[2] Published by the World Book Co., Yonkers-on-Hudson, New York.

Children[3] and the *Children's Catalog*[4] are valuable guides. The teacher's opinion based upon her experience with a book in the hands of pupils is the best final criterion for the classification of a book.

The unit procedure—The reading program recommended here involves the organization of reading activities around broad units of understanding. The teaching procedure in developing a unit of reading is similar to that often employed in the social studies and other content subjects. Following are the steps involved in developing such a unit, together with appropriate types of tests and other methods of evaluation:

1. *Motivation*—The teacher's first aim is to present the subject content of the unit so as to win the hearty interest and approval of the pupils. This activity is conducted with the entire class and may take a full period or more. Two basic questions constitute the criteria for evaluating this step: (1) Does the child have a clear idea of the nature of the problem to be solved or of the work to be accomplished? (2) Does he adopt this problem or work as his own? The personal opinion of the teacher gives the best answers to these questions.

2. *Defining specific objectives*—This activity, which involves all members of the class, is intended to orient the pupils with reference to the reading objectives to be attained. By means of class discussion under the guidance of the teacher, these purposes are clearly defined and illustrated. In actual classroom practise this step and the preceding one are often developed concurrently.

As a result of this step, the child should see not only the fundamental aims to be achieved by studying the unit, but also some of the specific reading skills and habits which he needs most in order to make his reading more effective. The best sources of evidence on these points are the experience of the teacher and of the child, and the results of reading tests previously given. The nature of these tests will be described later.

3. *Planning the study activities*—After the pupils have been acquainted with the content and purposes of the reading unit, the next important step is to plan the individual and class activities necessary to accomplish the work outlined. This planning is essentially a discussion activity involving all members of the class. Selections which should be read by all the pupils as basic minimum requirements are identified, and a general class procedure is adopted.

Selections from supplementary readers and reference materials which are to be read by individual pupils are located, and administra-

[3] American Library Association. *Graded List of Books for Children.* Chicago: the Association. 1936. 161 p.

[4] *Children's Catalog.* 5th ed. rev. New York: H. W. Wilson Co., 1936.

tive procedures whereby these materials may be obtained are considered, together with the self-testing procedures and other details connected with the independent work of each pupil. The pupils are made acquainted with the location and purposes of the various types of drill material and self-checking exercises available, and a time schedule is agreed on for the use of this material, which is completely individualized. The first three steps in the development of the unit may require from two to four reading periods.

4. *Carrying out the study activities program*—The heart of the reading program lies in the actual reading and study activities carried on by the children. The selections for general class study are taken up first, in order to familiarize all pupils with this common basic material. This activity may require a week or more. In the second stage of this step the pupils pursue their work individually. Under the guidance of the teacher each child locates the selection or book that he desires, follows the study guide in reading it, and then reports to the teacher for an oral or written test of his mastery of the content. This activity may continue for two weeks or more, with such variation as may be desired for purposes of remotivation, review, drill on reading skills, and so forth. The teacher endeavors to guide each child so that he will read material suited to his interests and level of ability, and so that he will do the widest possible amount of reading consistent with reasonable mastery of the content. This plan enables the pupil to progress at his own rate of reading and at his own level of comprehension.

There are three methods of appraising the activities in this phase of the work. The first consists of self-checking exercises provided by the teacher, whereby the pupil can check his own comprehension of the various materials read. This feature provides valuable experiences in character development and encourages independence and power. The second method is provided in the specialized test and practise exercises which are used for training in reading skills. The third method of evaluation is based on the judgment of the teacher, as formed during a brief conference with the individual pupil following his completion of each important selection read.

The tests mentioned in the foregoing paragraph provide the teacher with a wealth of diagnostic information on the basis of which she can guide the child in his reading activities. Moreover, experience shows that the plan herein described enables a teacher with thirty-five to forty children to have frequent individual conferences with pupils during the regular reading periods.

5. *Socialized discussion*—Immediately following the study activities the pupils as a class discuss their findings. Opportunity is given for

oral reports from committees or individuals. Choice selections are read orally in real audience situations. The stage is set for the dramatic presentation of significant episodes in the reading completed, and for the vigorous discussion of problems arising from the pupils' studies. These activities may continue for several days.

The best means of evaluating these activities is the trained judgment of the teacher. Her conclusions, based on oral reports of studies made, book reports, oral reading, and dramatic presentation, will guide her teaching activities. She will use oral reading tests for appraising the features of oral reading which these tests are designed to measure. Such tests as the Gray *Standardized Oral Reading Check Tests* [5] and the Gates *Word Pronunciation Test* [6] have been found useful for this purpose.

6. *Measuring progress*—As the final step in the development of the unit, the teacher and the pupils cooperate in appraising the progress made. Tests are given to cover the basic content of the unit and the skills involved in both silent and oral reading. Records of results are kept by the teacher and also by the pupils. These records include (1) rate of reading on standardized material, (2) scores on comprehension tests, (3) number of selections read for each unit, and (4) number of books read in the library and in the home.

APPRAISAL WITH REFERENCE TO MAJOR AIMS OF EDUCATION

Evaluation of the reading program with reference to the more fundamental objectives of education cannot be made adequately by means of objective tests alone. The seasoned judgment of the teacher, based upon her own experience and her knowledge of psychology, is also essential in determining the contribution of the program to these fundamental goals. Following are a few suggestions as to how the reading program may contribute to the major objectives listed on page 399. Each objective is restated here, and is followed by a brief discussion.

1. *To help the child understand the society in which he lives, and to develop in him an attitude of cooperation with others for the common welfare.*

As a means of securing this objective the school seeks to utilize the environment of the home, the school, and the community as the basic raw material of the curriculum. The child's contact with the give-and-take reactions of group life in the school and the community furnishes the primary experiences out of which education develops.

[5] Published by the Public School Publishing Co., Bloomington, Illinois.
[6] One of the tests in the *Diagnostic Tests in Reading* by Arthur I. Gates, published by the Bureau of Publications, Teachers College, Columbia University, New York City.

Reading intensifies these experiences and gradually extends them to include all significant experiences of the race. The unit plan of organizing reading activities, described above, contributes especially to the direct study of life activities. Children are guided in selecting problems for study which deal with vital social functions. The experience of working together on units of work furnishes excellent opportunities for pupils to practise cooperation with others for the common good.

2. *To encourage the use of the scientific method in solving problems.*

Educational leaders recognize that the uncertain problems of the future cannot be solved by learning solutions discovered by our forefathers. The organization of the curriculum content into units of understanding is the reading teacher's contribution to this goal of education. The discovery and evaluation of evidence on the question to be solved in the unit of study offers direct practise in open-minded, scientific problem-solving. The experience of deciding questions in terms of the best evidence available, and of suspending judgment until all the evidence has been considered, is a direct application of the scientific method.

3. *To develop the individual personality of each child.*

The interests of a democracy such as ours demand that each citizen's talents be developed and utilized in the service of the group. The success and happiness of the individual likewise require that his constructive personal characteristics be developed to their capacity. Reading makes a unique contribution to this goal by facilitating the development of the child in the direction of his own interests and capabilities. The individualization of instruction in the plan herein described furnishes a vehicle for meeting directly this personality need of the child.

4. *To develop a mastery of such skills and factual information as are necessary for effective participation in life activities.*

Reading contributes more than any other subject of the curriculum to this basic aim of education. The unique contribution of reading to this objective has been given special attention in the section dealing with the development of effective reading habits and skills. In meeting the challenge of this goal, each step of the unit plan is accompanied by diagnostic and remedial procedures designed to identify and correct the reading defects of the individual child so that he may participate effectively in life activities requiring reading.

5. *To develop independence and power.*

The ability and disposition to assume responsibility for directing one's own affairs in cooperation with others is of priceless value in a

democracy. The reading teacher's contribution to this goal inheres in an organization of reading activities which calls for the pupil's initiative and independence in pursuing his individual reading purposes. The type of reading program outlined above contributes directly by shifting to the child the responsibility, under teacher guidance, of selecting his own problems for study and the reading materials which will contribute to their solution. Such a program encourages the child to manage his own reading activities as rapidly as he can assume this responsibility.

6. *To develop an appreciation and a desire for the esthetic and spiritual values of life.*

It is obvious that reading has a unique contribution to make to this basic goal of education. Much of the culture of the race reposes in its literature, and this culture is open to exploration by the person who can read with understanding and whose sensitiveness to esthetic and spiritual values has been developed. A sound program of reading instruction develops the reading tastes and habits of children and gives them the ability to understand what they read. The teacher-pupil conferences which characterize such a program provide opportunities for personal guidance in securing these values.

7. *To establish a sound body, controlled emotional reactions, and desirable personal attitudes.*

So far as this important series of goals is fostered by scientific knowledge and by an understanding of natural laws, the person who reads with facility and comprehension has a clear advantage over one who does not. The reading program described above has been found effective in achieving these results.[7]

CONCLUSION

The plan of procedure outlined in this article shifts much of the responsibility from the teacher to the pupil. The suggested technics are designed to develop in the child an urge to accomplish certain immediate goals which fit his needs, and to provide the environment, equipment, and guidance necessary to foster his development as an independent, intelligent worker. The major functions of the teacher are (1) to motivate and guide the pupil in determining his reading purposes, (2) to provide the necessary reading materials, (3) to set the stage so that the child may pursue his work under the most favorable environmental conditions, (4) to assist the pupil in evaluating his own progress from time to time, and (5) to give such guidance and

[7] For a more detailed report of this reading program and of the experimental results obtained by it, see: Worlton, J. T. "Individualizing Instruction in Reading." *Elementary School Journal* 36: 735-47; June 1936.

encouragement that the child may work intelligently and with confidence. Much of the teacher's time is spent at her desk in private conferences with pupils. Class activities, small-group activities, and individual instruction occupy the class period as occasion requires.

The methods proposed for evaluating reading technics in the intermediate grades include the use of diagnostic tests, standardized survey tests, and the trained judgment of the teacher. Diagnostic tests make their principal contribution by revealing the child's immediate reading needs and interests as a basis for remedial procedures. Standardized survey tests furnish an index of the child's general level of reading ability, and thereby provide a basis for selecting reading material of suitable difficulty for him. These tests also furnish a valuable index of pupil growth in reading ability over a period of time. In the final analysis, however, the trained judgment of the teacher is the most important means of evaluating the reading program. It is in constant demand even for those phases which are measured by objective tests. Moreover, there are many important functions of reading—perhaps the most important—which do not lend themselves at present to objective measurement. In these areas, the teacher's judgment remains supreme. Chief among these functions is the contribution of teaching technics to the major goals of education and to pupil growth in habits of effective study, in reading tastes, and in the effective use of reading in daily life.

> A PROGRESSIVE READING PROGRAM is so broad and its aims are so diverse in nature, that attainment must be studied with reference to numerous specific objectives. Only thus can individual and group needs be revealed and served effectively. Constant study of pupil progress is the essential function of the teacher. A regular checking on a well selected range of objectives would do much to reduce over-emphasis on narrow aims or the uncritical adoption of ready-made "methods" or "devices." Undue use of devices unrelated to sound aims and principles of procedure too often results in superficial work and reduced learning values.—*Report of the National Committee on Reading*, Twenty-fourth Yearbook, Part I, National Society for the Study of Education, 1925, Chapter 9, p. 264. (Quoted by permission of the Society.)

TRYING OUT A COMBINATION OF METHODS IN TEACHING READING

MILDRED A. DAWSON

Supervisor of Childhood Education, University of Georgia, Athens, Georgia

THIS ARTICLE presents briefly the procedures used in evaluating a program of reading instruction in which three distinct methods were combined: (1) unit teaching, or the continuous reading of materials about a single topic for a considerable period of time; (2) differentiated assignments in reading for pupils of different abilities and interests; and (3) corrective teaching for pupils with specific reading weaknesses. The article does not describe a scientific experiment. Rather, the writer's purpose is to acquaint teachers and supervisors with a simple, informal, everyday plan for trying out a program of reading instruction when a truly scientific investigation is impracticable. The tryout described here was carried on under ordinary classroom conditions. Only one group of children was used. There was no matching of experimental and control groups to determine the relative merits of new and old types of instructional programs. The situation was similar to that faced by the typical teacher who is trying to obtain what evidence she can as to the success or failure of a new teaching procedure.

THE INSTRUCTIONAL PROGRAM

Unit teaching—The writer had been convinced, on the basis of practical experience and professional reading, that keen and sustained interests in reading could better be developed thru continuous and uninterrupted reading of materials on a single topic than thru reading a miscellany of stories and poems day after day. She had, therefore, been directing a reading program in which reading selections that dealt with any single topic were pooled—regardless of their location in various books and periodicals—and taught consecutively. Prior to the inauguration of the new program, however, such related selections were taught separately and no real unity was attained. Consequently, a plan was devised whereby the pupils could read without interruption for several days—or even weeks in the higher grades—on some one theme or topic common to all the materials in the reading unit.

Differentiated assignments—Realizing that pupils vary in speed and efficiency of reading, and that their interests and tastes differ in similar manner, the writer had earlier used the differentiated assignment to meet these varying needs. This procedure included an extensive bibliography of reading materials and a three-part assignment as follows: (1) a minimum amount of reading, with questions directing attention to

essential ideas; (2) exercises for developing knowledge and appreciation of an enriched vocabulary; and (3) additional reading or dramatic and other expressional activities. This plan permitted each pupil to work at his optimal speed, select materials in accordance with his interests and his reading efficiency, and participate in the expressional activities that most appealed to him. This procedure was combined with the unit teaching in the new program being tried out.

Corrective teaching—In planning the program of uninterrupted reading, it became apparent that pupils who were deficient in reading skills would have little opportunity for corrective instruction and remedial practise. To meet this problem, periods devoted to remedial instruction were combined with the periods given over to continuous reading of related materials. Specifically, the first or the last ten minutes of each reading period were devoted to the corrective teaching of individual pupils or of small groups having needs in common.

THE TRYOUT

To try out this combined program, the writer obtained complete charge of a sixth-grade class for an hour each day during one quarter of the academic year. Evaluation of the program was made by means of thoro altho informal inventories of the pupils' interest and skill in reading at the inception and the conclusion of the tryout. Any gains in interest and pleasure in reading could be measured only indirectly and subjectively, two procedures being used by the writer for this purpose: (1) direct observation of the children in their reading activities as ordinarily carried on, and (2) conferences with the teacher who had previously had charge of the sixth-grade reading. The latter, in turn, based her opinions on extended observation during the period of the tryout, on the amount of voluntary reading done in the third part of the differentiated assignments, and on the spontaneous comments of the pupils.

The gains in reading skills were more definitely and objectively determined. The writer first carefully inspected the cumulative record card of each pupil who was to participate in the new program. For the pupils whose records indicated low or mediocre attainments in reading, the copies of the *Stanford Achievement Test*[1] and of the informal tests of reading skills were taken from the files and studied in detail. Conferences with the sixth-grade teacher and further observation of reading classes supplemented these data, so that health conditions, home environment, habits of work, and attitudes toward school and toward reading in particular were taken into consideration.

[1] Published by the World Book Co., Yonkers-on-Hudson, New York.

It was, of course, necessary that pretests be devised and administered immediately upon the inauguration of the program. Similar informal tests were then constructed and given at the conclusion of the tryout. These tests were designed to measure rate and comprehension, the organization of ideas, and meaning-vocabulary in silent reading, as well as to identify deficiencies in oral reading skills and word recognition. On the basis of the initial results, reading case studies were written up for the pupils who were in need of corrective teaching, and one or two of the more glaring deficiencies of each pupil were selected for remedial attention.

Three of these pupils were found to have difficulties of an aggravated and apparently individual sort; six others apparently needed some corrective teaching of one kind or another. Two small groups were organized for the purpose of improving rate of reading: (1) children who were satisfactory in comprehension and ability to recognize words but prone to read slowly because of painstaking application to the printed page, and (2) those who were deficient in word recognition. Appropriate exercises were administered separately to each of these groups. The three problem cases were treated according to their respective difficulties. Each such pupil was given individual attention three days per week; he also read with the group the materials in the unit of reading at hand, but was directed to choose those selections and books that had been placed on a separate shelf because of their relative simplicity.

Meanwhile, the entire group had become acquainted with the opportunity to read extensively and uninterruptedly during a period of days. An orderly procedure for obtaining books from the shelves was worked out, and pupils were encouraged to find related materials in the library and bring them to the classroom. In the twenty minutes not devoted to remedial teaching, the writer observed the evidences of interest and the quality of attention manifested by the pupils, and made note of their individual reactions and overt symptoms of pleasure.

The experimental period concluded with an assembly at the suggestion of members of the class. The writer closed the period two weeks early for two reasons: (1) to give time for the end tests, and (2) to afford an opportunity to spend a few days on the traditional separate-lesson procedure. The latter was done to get the pupils' spontaneous comments when the teacher assigned them a lesson to be read and treated in one day, in contrast with continuous reading on a topic for several days.

General Results and Conclusion

It is feasible here to make only general comments in regard to the results of the program described above. In the first place, the pupils openly expressed their pleasure in being able to go ahead with their

reading on the same topic day after day. This was particularly true of the proficient readers, and even more so of the less able readers after the first four or five days. More books were voluntarily brought from the library than had been the case under the separate-lesson mode of teaching, altho special assignments calling for such activity had been frequent under the old plan. Moreover, more pupils participated in bringing books from the library. The more intelligent and proficient readers had less time to dawdle, and contributed more than they ordinarily had done in the expressional activities suggested in part 3 of the assignment.

Those pupils who had been reading slowly because of too conscientious attention to each word of their reading materials, apparently overcame all their handicaps with respect to rate of reading. The abilities to analyze unfamiliar words, to recognize them thru context, and to enunciate more clearly were distinctly improved in the other slow-reading group. The three problem cases made considerable improvement in ability to attack their reading independently.

The writer is convinced that teachers can do much to improve their teaching procedures if they will consider the results of scientific investigations concerning the technics and materials of instruction. Such investigations take on value in proportion to the intelligent use that administrators, supervisors, and teachers make of the findings in improvising improved technics of instruction. The writer also believes that teachers and supervisors can evaluate new procedures with reasonable objectivity and adequacy, even if they cannot carry on a truly scientific investigation. An informal tryout under the usual classroom conditions—including systematic observation of class work, thoro study of the school records and personal histories of the pupils, and careful analysis of the results of standardized and informal objective tests—would seem to be an adequate means of evaluating most changes in teaching procedure in a typical school.

It is probably the duty of every teacher to study her status quo, to consider her unsolved teaching problems and the possible means of solving them, and to set up an inventory of the abilities, attitudes, habits, and needs of her pupils both as the preface and as the conclusion of her attempt to try out a new and promising method of instruction. While there should undoubtedly be some use of standardized tests, a wide-awake teacher can make good use of the check tests found in the study type of readers, and can devise supplementary informal tests of her own that will help significantly in evaluating new procedures. Teaching as a profession will improve as more and more teachers make objective and thoro studies of their problems, inaugurate intelligently conceived programs of improvement, and evaluate these programs without prejudice in a systematic and careful fashion.

PROCEDURES FOR APPRAISING REMEDIAL READING IN GRADE VII

ARTHUR E. TRAXLER[1]

Research Associate, Educational Records Bureau, New York, New York

ANY PROGRAM of remedial teaching, if it is to be successful, must be accompanied by careful measurement. Measurement must be made, first, in the interest of the individual pupils concerned, for it is only thru testing that the pupils who need attention can be isolated with accuracy and their progress during remedial treatment followed with any degree of precision. Initial tests, if they provide for sufficiently detailed analysis, will show the specific weaknesses of the pupils so that intelligent attention may be given to their needs, and tests administered at intervals during the teaching will show the points at which the pupils are making satisfactory response to treatment and the places at which instruction must be especially thoro and prolonged.

In the second place, measurement is needed in order that the school may evaluate the various methods of instruction and finally select a group of technics whose efficacy has been demonstrated. The school may, for example, wish to compare the results of individual teaching with those obtained from group instruction, the effect of remedial instruction carried on in a regular class with that of instruction in small groups scheduled at study periods, the effectiveness of remedial workbooks with that of a program developed by the teachers for directing attention toward specific skills—or to make any of several other comparisons. All this calls for careful measurement and interpretation of results.

It is highly important that the difficulties of pupils who reach the end of the elementary school handicapped by an inability to read effectively, be discovered when they enter the junior high school. For this reason many schools are making increased use of procedures for reading evaluation at the end of Grade VI and in Grade VII. To show concretely how such measurement may be carried on, this article will describe procedures used in evaluating reading achievement during several years of remedial and corrective work in Grade VII of the University of Chicago Laboratory Schools.

Survey to discover inferior readers—Nearly all tests suitable for measuring the reading achievement of upper-grade and junior high-school pupils have been tried out, at one time or another, in Grade VII of the Laboratory Schools. The most satisfactory practise seems to be to include in the battery of placement tests administered before the

[1] Formerly Psychologist, University of Chicago High School, Chicago, Illinois.

pupils enter the grade, two survey reading tests—that is, relatively short tests that provide one or two gross scores in reading achievement—and a group intelligence test, and to follow up these survey tests with a diagnostic reading test soon after the beginning of the fall term. Since a group mental test has obvious limitations for measuring the intelligence of pupils with reading handicaps, the results of such a test are usually checked by means of I.Q.'s on the Stanford-Binet test. Stanford-Binet I.Q.'s are already entered on the records for pupils who have been in the Laboratory Schools in preceding years, and new pupils can readily be scheduled for an individual test early in the school year.

Thus the scores on three reading tests, a group intelligence test, and an individual mental test are available for use in selecting pupils for remedial work. The pupils who are consistently in the lowest quarter of the class are usually scheduled for special help in reading. Grade norms receive little attention in the selection of the pupils, since it is believed that if a pupil is an inferior reader in comparison with his classmates, he should receive corrective teaching, even if he is up to the norm for schools in general. Other pupils who are not especially low in reading skill, but who are not reading as well as their scholastic aptitudes indicate that they should read, are sometimes placed in the special reading group. Conversely, pupils of limited scholastic aptitude whose reading, tho inferior, is as good as can be expected in view of their mental level, are occasionally excused from participation in the special reading work, on the ground that it would be inadvisable to place them under additional pressure. However, except in rare instances, it has been the practise to place all the less capable readers in the remedial reading group. It is believed that reading is so important for successful adjustment to school and to adult life that every effort should be made to advance the reading skill of practically all pupils who consistently make low scores on reading tests.

The judgment of the elementary-school teachers who have taught these pupils is a valuable supplement to the test scores when it can be secured. Thru the use of all available evidence, about twenty retarded readers have ordinarily been chosen from a class of seventy-five or eighty pupils entering Grade VII.

Diagnosis of reading difficulties—The Monroe *Standardized Silent Reading Test*[2] and the *Thorndike-McCall Reading Scale*[3] are two survey reading tests that have been used rather consistently in the placement test battery given to pupils entering Grade VII of the University

[2] Monroe, W. S. *Standardized Silent Reading Tests, Revised.* For Grades III-VIII. Bloomington, Illinois: Public School Publishing Co.

[3] Thorndike, E. L., and McCall, W. A. *Thorndike-McCall Reading Scales.* For Grades II-XII. New York: Teachers College, Columbia University.

Laboratory Schools. Altho the scores on these tests do not provide for diagnosis, some diagnostic work is done with them thru an analysis of the test papers of the pupils. An additional basis for diagnosis is provided by a diagnostic reading test, usually the *Iowa Silent Reading Test,*[4] that is given as a part of the fall testing program of the school. Still another diagnostic test is ordinarily given before remedial training starts. A test frequently used at this point is the *Sangren-Woody Reading Test.*[5] Since no two diagnostic tests deal with precisely the same set of reading skills, the results of the second diagnostic test serve to extend the detailed information already available about the reading weaknesses of each pupil.

The diagnostic work usually involves one or more periods of observing each pupil while he reads aloud. For this purpose, an oral reading test such as the Gray *Standardized Oral Reading Paragraphs*[6] may be used, or material in textbooks designed for the particular grade level may be utilized in the same way as the Gray test. Altho this oral reading takes a good deal of time, since it must be done individually, it is not advisable to omit it, for a record of the number and kinds of errors made by a pupil in oral reading is very valuable in understanding his difficulties.

Since one of the purposes of the remedial reading work has been to develop procedures that may be applied in other schools, the diagnosis has usually been confined to tests and other instruments that are available to all schools. Occasionally, however, two special technics have been used. One of these is the technic for photographing eye movements and analyzing the record thus obtained. Altho this method is well known, the special apparatus for carrying it out is usually not available except in educational and psychological laboratories.

The other special diagnostic procedure involves the use of a simple tachistoscopic device for testing the child's speed of association.[7] The purpose of this test is to discover the pupils who are especially slow in associating ideas with words. Since a fairly high degree of relationship has been found between rate of reading and speed of association, it seems inadvisable to try to get pupils who are very slow in speed of association to reach the grade norm in rate of reading. Pressure to increase rate will probably not result in any noteworthy gain in speed by these pupils, and it may upset them emotionally.

[4] Greene, H. A., and Kelley, V. H. *Iowa Silent Reading Tests.* Elementary Test, for Grades IV-IX. Yonkers-on-Hudson, New York: World Book Co.

[5] Sangren, P. V., and Woody, C. *Sangren-Woody Reading Test.* For Grades IV-VIII. Yonkers-on-Hudson, New York: World Book Co.

[6] Gray, W. S. *Standardized Oral Reading Paragraphs.* For All Elementary Grades. Bloomington, Illinois: Public School Publishing Co.

[7] For a discussion of this test, see: Traxler, Arthur E. "The Relation Between Rate of Reading and Speed of Association." *Journal of Educational Psychology* 25: 357-65; May 1934.

The diagnostic work is done by the school psychologist, with the assistance of the teacher responsible for giving the remedial training to the pupils. The final step in the diagnosis is to write a brief descriptive statement of the major reading deficiencies of each pupil. After this has been done, it is sometimes possible to classify the pupils into four or five groups such as the following:

1. Pupils retarded in all phases of reading
2. Pupils weak in the mechanics of reading—poor eye movement habits, visible lip movement, head movement, etc.
3. Pupils who cannot comprehend study materials involving the seeing of relationships
4. Pupils with limited vocabulary
5. Pupils who read slowly but with fair comprehension.

Evaluation during the period of instruction—A preliminary analysis of the kind just described is basic to the early stages of the remedial training, as it indicates the direction which the teaching should take. It is not within the scope of this article to describe in detail the various remedial reading procedures that have been used in Grade VII of the Laboratory Schools. Descriptions of the instructional work have been recorded in other places that may be accessible to persons interested.[8] In general, four plans for organizing the remedial instruction have been tried out at different times: (1) assignment of all pupils in the remedial group to one English class in which the reading instruction is carried on as a part of the regular work in English; (2) instruction of small groups of six or eight pupils with similar difficulties at study periods or other convenient times; (3) utilization of the English conference period[9] for special remedial instruction by the English teachers; and (4) individual remedial instruction given by the psychologist or by a specialist in remedial reading.

Regardless of the way in which the instruction is organized, several kinds of measurement may be applied during the period of teaching. One type of measurement utilizes an alternate form of one of the same tests given before instruction was begun. This test is ordinarily administered about three weeks after the beginning of the remedial teaching in order to discover the extent to which the methods used are taking effect, and to find out how much progress is being made by the individual pupils. The results may serve to redirect the teaching and to eliminate a few pupils from some phases of the remedial work.

[8] See: McCallister, James M. "The Effectiveness of Remedial Instruction in Reading in the Junior High School." *School Review* 39: 97-111; February 1931. ¶ Traxler, Arthur E. "Group Corrective Reading in the Seventh Grade—An Experiment." *School Review* 41: 519-30; September 1933. ¶ Traxler, Arthur E. "An Experiment in Teaching Corrective Reading to Eight Seventh-Grade Pupils." *Journal of Educational Research* 29: 247-53; December 1935.

[9] Under this plan classes meet four periods a week for their regular work. The fifth period is a "conference" period in which pupils who are having difficulty with their work are given special help by the teacher, while the other pupils are sent to the library.

If a standardized series of test lessons providing for the translation of raw scores into comparable grade scores, or G-scores, is used in the remedial instruction, these G-scores become convenient indexes for evaluating the reading progress of the different pupils. While a single lesson is ordinarily too short to afford very reliable results, an average of several G-scores and the general trend of a pupil's G-scores from day to day are of considerable significance. Such comparable measures lend themselves to a graphic record so that a visual presentation of the reading growth of the various individuals may be made. It has been found that pupils are motivated to improve if they are permitted to keep graphs of their own scores.

Frequent informal tests also are given during the period of remedial teaching. These consist of reading selections taken from textbooks for Grade VII and other books of suitable difficulty, followed by comprehension questions on the material. While the results of these informal tests are, of course, not directly comparable, they do furnish some evidence about improvement in reading skill. For instance, if the rate of reading study-type materials in social science is measured at regular intervals over a period of several weeks, a consistent trend toward higher rate scores will be indicative of growth in speed of reading, even tho the various selections used as tests are not identical in difficulty.

A procedure sometimes used in the Laboratory Schools to evaluate the improvement in study habits accompanying remedial teaching, is to observe the pupil while he is studying in the library or classroom and to make a record of his periods of application and of distraction on a specially prepared form known as the *Chicago Sustained Application Profile Sheet*.[10] The sheet is marked off vertically in thirds, and each third is divided into a column for *distraction* and a column for *application*. Time units of ten seconds are marked off by lines drawn horizontally across the page. The person who observes the pupil records the latter's application or distraction in terms of time by drawing a vertical line in the appropriate column. Three twenty-minute periods, or a total period of one hour, may be recorded on a single sheet. If one application record is made early in the period of training, and another after the remedial teaching has been carried on for some weeks, a comparison of the two records will afford some evidence as to improvement in application or concentration, provided the situations in which the observations are made are similar.

Evaluation following remedial teaching—Comparable forms of at least two, and usually three of the reading tests used in selecting the

[10] Distributed by the University of Chicago Bookstore.

deficient pupils and in diagnosing their difficulties, are given at the end of the remedial period to measure growth in reading ability. One of these is always a diagnostic test so that progress in specific skills as well as in total reading achievement may be indicated. The gain in raw score on each test is usually translated into terms of growth in months. It has been found that most junior high-school pupils who are given remedial instruction in reading gain much more than the normal amount for pupils not in remedial classes during the same period of time. The average improvement of four groups of pupils is shown in Table 1. It would be inadvisable, however, to draw conclusions from this table about the efficacy of the different plans of instruction, for the tests used were not uniform, and the groups were small and not equated in initial reading skill.

TABLE 1—AVERAGE GAINS OF REMEDIAL GROUPS ON CERTAIN READING TESTS [a]

NUMBER OF PUPILS	LENGTH OF TRAINING	NUMBER OF TEACHING PERIODS	PLAN OF INSTRUCTION	AVERAGE GAIN IN MONTHS [b]
1	2	3	4	5
24	8 months, but not continuous	69	Group instruction in English class	14
22	8 months, but not continuous	About 75	Group instruction in English class	16
8	2 months	19	Group instruction *outside* class	13
4	Varied from 3½ to 7 months (one or two periods per week)	22–24	Individual instruction	22

Read table: A group of 24 pupils who were given remedial instruction in English class for 8 months, including 69 teaching periods, made an average gain of 14 months in reading test score. Similarly read figures for the other three groups of pupils.

[a] Based on results of the following tests: Monroe Silent Reading, Iowa Silent Reading, Sangren-Woody Reading, and Traxler Silent Reading.

[b] The gain in months represents the average gain in score-points which pupils at this level usually make in the same number of months.

Another procedure for evaluating the effectiveness of remedial instruction is to photograph the eye movements of the pupils, and to compare this record with the record secured before the teaching with respect to number of fixations, length of fixations, and number of regressive movements. For pupils whose eye movement habits were very inferior when the remedial work was started, such a comparison may be very significant. On the other hand, the improvement in

power to interpret meaning by pupils whose eye movement habits were already quite mature may not be reflected to any marked extent by changes in the eye movement records. Improvement in eye movements may be taken as evidence of gain in reading skill, but absence of change in fairly satisfactory eye movement records is not in itself evidence of failure to gain in reading ability.

When remedial instruction is given to a large group of pupils at one time, a few pupils usually fail to respond to the training and do not show any significant gain in test score. These pupils are, as a rule, scheduled for further instruction, which is carried on individually so that it can be aimed definitely at the particular needs of each pupil. This training is ordinarily conducted by the psychologist or special worker in remedial problems, rather than by a classroom teacher. Evaluation procedures are unchanged except that regular observation and descriptive records play a larger part.

Evaluating permanency of improvement—It is often assumed that when pupils are brought up to a certain score on tests given at the end of a period of remedial teaching, they will continue to gain from that point. As a matter of fact, when the pressure of remedial work is removed, a considerable number of the pupils tend to lose in score for a time. It is therefore very desirable to retest the pupils some months after training has been discontinued.

The remedial reading work in Grade VII of the University Laboratory Schools has usually been brought to an end near the close of the school year in June. The pupils are retested for permanency of improvement when they come back to school in the fall. Since most pupils do comparatively little study-type reading during the summer vacation, it seems logical to assume that a comparison of scores made at the end of the teaching with scores made at the beginning of the following school year, will furnish some evidence about the permanency of improvement in reading achieved during remedial instruction.

It has been found that, on the average, pupils who have been given remedial work tend to lose somewhat in rate of reading over the summer period, but make comprehension scores very similar to those obtained immediately after the close of the remedial teaching period. Some individuals gain, and some lose considerably in all phases of reading, but very rarely does a pupil who has shown significant improvement during the progress of the remedial work fall as low in reading test score as he did before the instruction was given.

EXPERIMENTING WITH APPARATUS IN TEACHING THE DIVISION OF FRACTIONS

JOHN W. DICKEY

Professor of Educational Psychology, New Jersey State Teachers College, Newark, New Jersey

DIVISION OF FRACTIONS is customarily taught in the latter part of the fifth grade or the early part of the sixth grade. Judging by an examination of seven recent and widely used series of arithmetics, children are practically always taught to perform the operation of division by inverting the divisor and multiplying. Moreover, writers on professionalized arithmetic, such as Morton, Roantree and Taylor, Overman, Klapper, Lazar, Thorndike, Stamper, Brueckner, Newcomb, Bond, Upton, Buswell and Judd, Miller, Smith, Brown and Coffman, and Grossnickle, agree on rational grounds that the proper way to divide fractions is to invert the divisor and multiply. Osburn seems to be the only writer who advocates that fractions be divided by the common denominator method. At present there is no experimental evidence upon this problem. General practise is determined by the textbooks, which in turn are based upon a consensus of expert opinion.

All who speak of the difficulties in learning the division of fractions agree that the greatest hazards are in connection with inverting the divisor and changing the sign to multiplication. This article reports the present writer's experience with a unique visual aid in teaching the process by this method. The discussion proceeds as follows: (1) a brief statement as to the prevalence and value of apparatus in the schools; (2) a description of the writer's teaching the division of fractions to a class of fifth-grade children with the help of the apparatus—the fraction divider; and (3) the results, objective and subjective, accruing from the use of the fraction divider. It must be said in the beginning that the writer has not conducted a strictly scientific experiment (which to his way of thinking cannot be done), but that all the evidence collected points in the same direction. In addition to the writer's own experience, three of his students in the teachers college used the apparatus during their student teaching, and all were in accord as to its values in facilitating the learning process.

PRESENT USES OF APPARATUS IN SCHOOLS

It is common knowledge that physical apparatus is used extensively in the science courses given in colleges, in senior high schools, and even in junior high schools. In the elementary school, objects, specimens, and models are used to some extent in nature study, and one of the

forward-looking tendencies is to introduce into the elementary curriculum more of the physical sciences which require additional apparatus. Mathematics also makes considerable use of apparatus, particularly at the college and senior high-school levels. Recently the junior high school has been taking an interest in apparatus for mathematics courses woven around field projects. In elementary-school arithmetic, however, only a meager amount of apparatus is used, such as rulers, liquid and dry measures, and certain devices to drill children in the fundamental facts of addition, subtraction, multiplication, and division. In both science and mathematics the general tendency is to extend downward the appropriate practises of the colleges and universities, and the use of apparatus is no exception to this rule. Since learning is probably carried on in essentially the same way at all levels of maturity, we should give careful attention to practises which have been found successful at levels other than our own.

A word should be said also about the specific function of any apparatus, irrespective of the field of learning in which it is used. Apparatus explains the "how" of things and not the "why" of things. The reasons for a given procedure are not infrequently made easier to grasp when apparatus is used, but to show these reasons is not the function of apparatus. With the apparatus alone we cannot guarantee to explain the "why" of inversion, but we can show the "how" and perhaps make it easier for the child to arrive at the "why" when the apparatus is combined with other approaches.

TEACHING THE EXPERIMENTAL LESSON

General conditions—Thru the cooperation of the city school system of Newark, New Jersey, it was possible to secure thirty-three fifth-grade children who had just learned something of the addition, subtraction, and multiplication of fractions. They had learned nothing about the division of fractions prior to this lesson. All of them were in the second half of the fifth grade, and were the only pupils at this level in a school of 1008 children. Three of the thirty-three children had been promoted by the principal despite their low marks; two had been recommended for the "Binet group"; and three had "skipped" a half-grade. The remainder of the group had experienced normal progress in school. These facts, with others obtained from the principal, led the writer to believe that the group was rather typical of fifth-grade children in general.

At 10 o'clock on Monday just preceding the Christmas holidays these children arrived at the writer's classroom for their instruction in the division of fractions. The instruction period lasted for fifty-

five minutes, and the teaching was done by the writer. He had some disadvantage for he did not know the children, and the children no doubt felt some discomfort due to the entirely new surroundings. More than fifty teacher-training students were visitors—another distraction for the pupils. In all probability the conditions were not as conducive to learning as are normal classroom conditions.

Introducing the division of fractions—After each child had fastened upon himself a piece of paper bearing his name so that the writer could see it, we began teaching the division of a fraction by a fraction —a process supposed to be more difficult to learn than either the division of a fraction by an integer or the division of an integer by a fraction. We began by trying to understand the "why." We placed twelve twenty-five-cent pieces (quarters) in the clear view of the entire class. These twelve quarters were then divided into piles of two quarters each, and the number of piles was counted. This process was then expressed on the blackboard as follows:

$$12 \text{ quarters} \div 2 \text{ quarters} = 6$$

In a similar manner we divided the twelve quarters into piles of three, four, and six quarters each. Each such division was accompanied by a blackboard demonstration. We then wrote our blackboard examples in the form of

$$1\tfrac{2}{4} \div \tfrac{2}{4} = 6,$$

and so forth, in a column parallel to the first blackboard presentation. These two columns made it easy to see the relationship between the two ways of writing the examples, and the fact that only numerators need to be divided when the denominators are alike—an observation made by one of the boys in the class. As a class we verified this observation.

Inverting the divisor—The next step in the lesson was to present such examples as "$1\tfrac{2}{4} \div \tfrac{1}{2}$." After the writer had asked a few leading questions, the class soon realized that this example could be written "$1\tfrac{2}{4} \div \tfrac{2}{4} = 6$." A number of similar examples were experimented with and written on the blackboard in column form. Then came the time for the inversion of the divisor. Parallel with the last column and to the right of it, the writer wrote the examples with the divisor inverted and the division sign changed to a multiplication sign.[1] As a class we solved these last examples and always got results agreeing with the corresponding examples on the left. Finally the writer said, "It works, doesn't it?" "Yes," said the class. "What did I do with the

[1] Elsewhere the writer has traced the historical development of this rule, and has shown that it renders the denominators common and non-effective and places the numerators in an indicated division. See: Dickey, John W. "Why Invert the Divisor and Multiply?" *School Science and Mathematics* 26: 299-302; March 1936.

divisor?" There was no reply. "I inverted the divisor and changed the sign to a multiplication sign." Here the writer wrote "invert" on the blackboard.

Using the "fraction divider"—At this point the fraction divider, which had been kept from sight up to this time, was brought into clear view. Thirty-three children had eyes as large as saucers. Figure I is a front view of the fraction divider. The dark, circular areas on the left are small blackboards upon which can be written any fraction. The "$\frac{2}{3}$" on the right, as well as the division and equals signs, are movable. This makes it easy to adjust the parts after the slab on the right—the divisor slab—has been inverted.

The back view of the fraction divider (see Figure II) shows the circular blackboards built in one slab, and the movable parts of the other slab which permit the inversion of the entire slab. The circular disks make it possible to aright the integers, "2" and "3," after inversion has taken place. The parts upon which the operational signs are painted are movable. These signs are so arranged that back of the division sign (shown in Figure I) is placed the equals sign, and back of the equals sign, a multiplication sign. This makes it possible to invert the divisor slab without interchanging the signs. After inversion the signs are readily adjusted by turning the back of each sign to the front. This is the last adjustment to be made after inverting.

Figure III is a detailed drawing of the fraction divider, showing all the parts drawn to scale. This apparatus is not patented, and may be constructed and used by anyone.

During the manipulation of the fraction divider care was taken to keep the divisor, "$\frac{2}{3}$," on the right. While dividing five examples with the help of the apparatus, we presented also the blackboard work. One boy came to the front of the room and solved an example with the apparatus; a girl solved another example. Great interest was shown thruout the fifteen minutes during which the apparatus was used. Attention was constantly called to the fact that we were "inverting the divisor, which is on the right," and that "the sign was changed to multiplication." The apparatus was then removed from the children's view, and they solved the following four examples on paper:

$\frac{8}{6} \div \frac{2}{3} =$ $\qquad$ $\frac{1}{4} \div \frac{2}{3} =$

$1\frac{8}{9} \div \frac{2}{3} =$ $\qquad$ $\frac{1}{5} \div \frac{2}{3} =$

After each example had been solved by the great majority of pupils, the writer verified their results by solving the example orally. Then a show of hands was made to indicate successes. We were making real progress when the bell rang. The period was at a close, and the children left for their own school building.

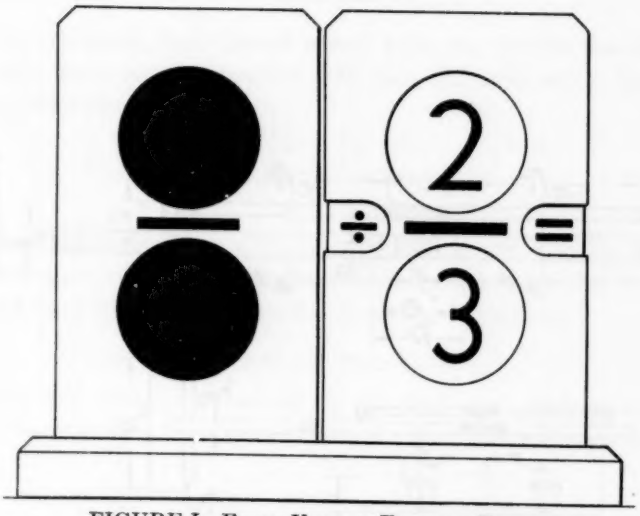

FIGURE I—Front View of Fraction Divider

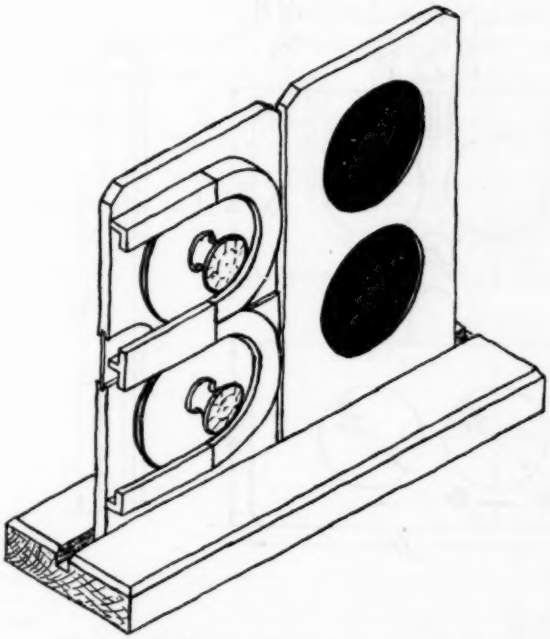

FIGURE II—Rear View of Fraction Divider

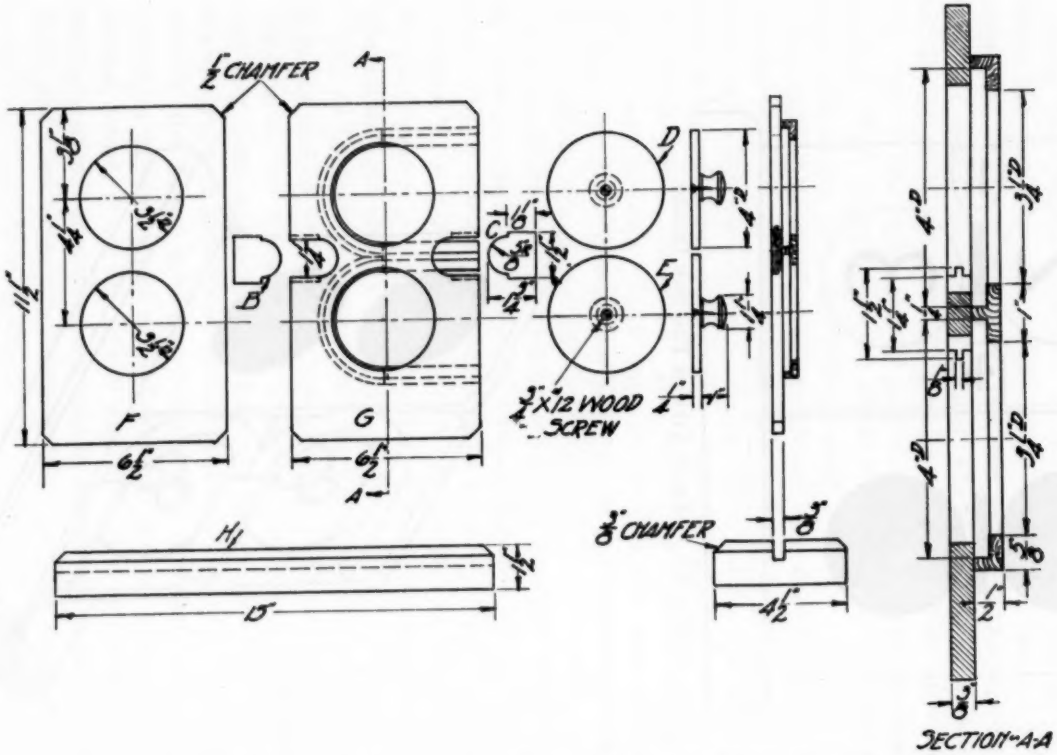

FIGURE III—Detailed Orthographic View of Fraction Divider, with Dimensions of All Parts Given in Inches

On the following half-day of school (the day before the Christmas vacation) their regular teacher had the children solve these three division examples:

$$\frac{1}{2} \div \frac{1}{3} =$$
$$\frac{3}{8} \div \frac{5}{16} =$$
$$1\frac{1}{12} \div \frac{5}{6} =$$

No results from this test were recorded, however. The children then had a vacation of eleven and one-half days, during which they probably had very little practise in the division of fractions.

RESULTS OF THE LESSON

During the arithmetic period on the first day after school reconvened, the teacher administered the test of ten examples shown below:

$$\frac{2}{5} \div \frac{2}{3} = \qquad \frac{5}{11} \div \frac{3}{22} =$$
$$\frac{4}{9} \div \frac{1}{2} = \qquad \frac{2}{3} \div \frac{4}{18} =$$
$$\frac{5}{16} \div \frac{1}{8} = \qquad \frac{4}{15} \div \frac{7}{12} =$$
$$\frac{8}{9} \div \frac{2}{5} = \qquad \frac{5}{6} \div \frac{7}{8} =$$
$$\frac{5}{12} \div \frac{2}{3} = \qquad \frac{7}{12} \div \frac{3}{5} =$$

The test papers were collected and scored by the regular teacher, and were then turned over to the writer for additional study. A summary of the results appears in Table 1. Sixteen of the pupils made

TABLE 1—ACHIEVEMENT OF FIFTH-GRADE PUPILS ON AN INFORMAL TEST IN DIVISION OF FRACTIONS

NUMBER OF EXAMPLES SOLVED CORRECTLY	NUMBER OF BOYS	NUMBER OF GIRLS	BOTH SEXES
(1)	(2)	(3)	(4)
10	8	8	16
9	2	6	8
8	4	1	5
7	1	....	1
6	....	....	....
5	1	....	1
4	....	....	....
3	....	....	....
2	....	....	....
1	....	....	....
0	....	2	2
Total	16	17	33
Arithmetic mean	8.9	8.4	8.6

Read table: Eight boys solved ten examples correctly, two solved nine examples correctly, etc. The mean number of examples solved correctly by the sixteen boys was 8.9. Similarly read figures for girls and for both sexes combined.

FIGURE III—DETAILED ORTHOGRAPHIC VIEW OF FRACTION DIVIDER, WITH DIMENSIONS OF ALL PARTS GIVEN IN INCHES

perfect scores; eight solved nine examples; five, eight examples; one, seven examples; one, five examples; and two solved no examples correctly. The average for the boys was 8.9 examples, and for the girls 8.4 examples.

A study of the errors made by these children proved very interesting in view of the consensus of opinion regarding the hazards of inverting the divisor and changing the sign to multiplication. The only failure due to not inverting the divisor was made by a boy in the seventh example listed above. One girl who failed in all examples did not attempt to invert any divisors, but tried to solve all examples by the common denominator technic which we had used in the initial stages of the lesson. This girl had a rather severe case of nearsightedness, which may have been partially responsible for her behavior. All other errors were made in multiplication or in reducing fractions to lowest terms. Thus, only one example in 320, or 0.3 percent, was incorrectly solved because of an unsuccessful attempt to invert the divisor and change the division sign to a multiplication sign.

CONCLUSION

The results reported above are largely quantitative in nature. We have no results which shed light on the degree to which the children understood the "why" of the procedure in dividing fractions. In this short hour of instruction we were trying to explain both the "why" and the "how." The available evidence indicates, however, that the fraction divider was helpful in (1) making more vivid the act of inverting, (2) stressing the fact that we always invert the divisor which is on the right, (3) stressing the idea that we change the sign and multiply, and (4) teaching this rather difficult process with unusually good results.

The writer believes that the process of learning is fundamentally the same for all ages, and that much can be gained by the introduction of more well-chosen apparatus in the teaching of elementary arithmetic. The results reported in this article, together with those obtained by three teacher-training students in practise, seem to favor the use of apparatus. However, since the number of pupils involved was small, and the tests used were brief and informal, it is not wise to draw broad conclusions concerning the value of the apparatus for all children or all teachers. Those interested in using the fraction divider will take steps to determine its results in their own schools and classrooms.

EVALUATING SUPERVISED STUDY

L. R. KILZER

Professor of Education, University of Wyoming, Laramie, Wyoming

SUPERVISED STUDY has been discussed prominently in educational periodicals for approximately three decades, and altho it is no longer an innovation, little progress has been made in the measurement of its outcomes. This is due very largely to two main factors, namely, (1) the lack of agreement in regard to just what supervised study is, and (2) the lack of convenient and effective technics or devices for the measurement of results obtained. This article first defines supervised study, and then presents a few technics or devices that have been found worthwhile in attempts to measure its outcomes.

What is supervised study?—If a dozen educators chosen at random had been asked a decade or two ago to characterize supervised study, there would probably have been almost a dozen different characterizations. There is still a confusion of tongues when this procedure is discussed, but the various points of view may be grouped fairly well into three main categories. One group of educators holds that supervised study is synonymous with the educational process as a whole, a point of view which is undoubtedly somewhat too broad. Others contend that they are using supervised study when they are making use of only one or two of the many essential activities which constitute real supervised study. Those who believe, for example, that they have supervised study simply because they use the divided-period plan, represent this point of view. The third point of view is set forth in a recent book,[1] in which supervised study is characterized as "the effective direction and oversight of the silent-study and laboratory activities of pupils." This definition, the present writer believes, is sufficiently inclusive to encompass the necessary activities of real supervised study, and at the same time it sets up limits which prevent the confusion of this procedure with education as a whole. Attention is called to the fact that this definition emphasizes both direction and oversight (supervision) of study. Some teachers, unfortunately, seem to believe that direction alone is sufficient. If educators will agree on a definition, the first step in the evaluation of supervised study will have been taken.

A checklist of basic principles—One of the first technics which make it possible to measure the results of supervised study is the formulation of a set of guiding principles, and a careful checking of the appli-

[1] Maxwell, C. R., and Kilzer, L. R. *High School Administration.* Garden City, N. Y.: Doubleday, Doran and Co., 1936. p. 345.

cation of these principles in actual classroom practise. Democratic school administration and supervision demand, of course, that the classroom teachers be given a significant part in building this set of principles. On the basis of extensive and intensive reading, intelligent observation in schools where supervised study is markedly successful, and much careful thinking, the principal and his staff should build a tentative set of guiding principles to be revised from time to time in accordance with newer philosophy, experience, and experimental results. The following list is merely suggestive, but it represents at least a starting point:

1. Since the assignment is the key to supervised study, it should be given careful consideration.
2. During supervised study in a given course, pupils should devote *all* their time to the study of only that course.
3. On the whole, at least half the total time available for a given course should be devoted to supervised study under the careful supervision of the regular classroom teacher.
4. The graduated plan should be used, i. e., a gradually diminishing percentage of total class time should be used for supervised study as a pupil progresses thru the school and as he gains proficiency in his study technics.
5. During supervised study, the teacher should devote her time to the supervision of the study of her pupils, and *not* to the grading of papers, the making out of examinations, etc.
6. The teacher should not disturb other pupils while supervising the study of one or more pupils.
7. Remote control (supervision of the study of a given pupil from a considerable distance in the classroom) should be avoided. Individual differences require intimate contacts.
8. The group study plan should be used whenever two or more pupils are confronted with the *same* difficulty. These pupils should be treated temporarily as a group rather than as individuals, and wholesome competition should be set up in this group.
9. The teacher should give sufficient help to avoid discouragement and the formation of poor habits of study, but she should not do the work *for* the pupil.
10. Physical factors which provide comfort for pupils and teacher should be given constant and careful attention. This implies that equipment must be suitable and properly arranged.
11. The technic for supervised study should be revised from time to time in the light of philosophy, experience, and experimentation.

A self-rating chart for teachers—Having formulated a set of guiding principles for use in supervised study, the next logical step is the provision of a chart whereby each teacher and each supervisor may rate himself conveniently at various times on the basis of his success in applying each of the principles set up. Figure I shows such a chart.[2] With minor changes the supervisor can adapt this chart so that it may be used in rating each teacher under his supervision.

A list of questions for supervisors—Supervisors have found it helpful to be provided with a set of questions which tend to make their

[2] Maxwell, C. R., and Kilzer, L. R., *op. cit.*, p. 359.

supervision of supervised study as objective as possible. The following list of twenty questions[3] is merely suggestive, but it may well be used as a guide in preparing the list to be used locally:

1. In what way should the teacher improve her technic in making the assignment?
2. Just what does the teacher do during supervised study?
3. Are the pupils permitted to work on only this subject during the supervised-study period for this class? (Note: The entire time belongs to the subject scheduled for this hour.)
4. Does the teacher give adequate encouragement and assistance to pupils without doing too much of their work herself?

[3] Kilzer, L. R. "Some Devices for Use in Checking the Supervision of Study." *American School Board Journal* 91: 25; August 1935.

TEACHER'S SELF-RATING CHART
(For Supervised Study)

DIRECTIONS:-- This form provides for nine successive monthly self-ratings on a 5-point scale. Let "1" represent highest possible efficiency in the application of a guiding principle, and let "5" represent complete lack of efficiency with regard to that principle.

With your list of guiding principles before you, give yourself, in the left-hand (1st) column, a fair rating on each of the principles which you helped compile. A month later, cover the left-hand column, and in the next column (2nd) rate yourself again with regard to each of the guiding principles. Now compare the ratings in the two columns.

Record successive monthly ratings similarly, and compare the successive ratings with all previous ratings on each principle.

SUCCESSIVE SELF-RATINGS									GUIDING PRINCIPLES
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	(See list you helped compile)
									No. 1
									No. 2
									No. 3
									No. 4
									No. 5
									No. 6
									No. 7
									No. 8
									No. 9
									No. 10
									No. 11
									No. 12
									No. 13
									No. 14
									No. 15

FIGURE I—SUGGESTED CHART FOR SELF-RATING BY TEACHERS

5. How effectively does the teacher use both direct and indirect methods of teaching a study habit? (Note: In the direct method both teacher and pupil have a definite aim in mind, but in the indirect method only the teacher has a definite aim in mind.)
6. How effectively does the teacher use both generalized and specific technics in teaching pupils to study effectively? (Note: Generalized technic applies equally well to all subjects, but specific technic applies particularly to only one subject.)
7. Does the teacher place proper emphasis upon methods of study, or does she overemphasize factual information and memorization?
8. Does the teacher disturb other pupils while she is assisting one or more pupils?
9. Is adequate attention given to individual differences among pupils?
10. What use is made of the group study plan? (If several pupils are having exactly the same difficulty, they should be handled as a group.)
11. How much homework does the teacher require?
12. How much time, on the average, is devoted to supervised study in this class?
13. Is the entire class time of one or more (successive) meetings of this class sometimes used for the supervision of study?
14. What evidence is there of poor control technic, i. e., inability to secure and maintain attention and good discipline?
15. In what ways should physical conditions be improved?
16. Does the teacher regard supervised study as a cooperative enterprise?
17. What use does the teacher make of devices for improving supervised study?
18. What are the most important improvements the teacher should make?
19. What are the good points that I can pass on to other teachers?
20. In what ways can I be of service to the teacher of this class?

Checking on time spent in supervised study—Unless there is a definite check upon the percent of total class time devoted to supervised study, many teachers tend to neglect the newer procedure and continue to pursue the older. Altho the success of supervised study cannot be determined entirely on the basis of the percent of total time devoted to it, the chances are greater that it will succeed where adequate time is provided for it than where inadequate time is provided. It is no longer considered good practise to divide the class period so that half the time in every class is devoted each day to supervised study. On some days, for example, it is wise to devote all the time of the class period to supervised study, while on other days it is equally wise to devote all the class time to some other step of the teaching cycle. On the whole, at least half the total class time in a given course should, in the opinion of the writer, be devoted to supervision of study. A form such as that in Figure II will assist the teacher in checking upon the total amount and the percent of class time devoted to supervised study in each course. The supervisor may readily adapt the form for use in rating those who work under his supervision.

Recording questions and suggestions—The teacher and the supervisor in the course of their regular work in supervised study are often confronted with questions which they wish to discuss with others in

conference. Unless these items are jotted down immediately, they are usually forgotten or overlooked. A simple but convenient device for this purpose is a sheet containing brief directions at the top and two blank parallel columns below, one headed "Some Questions Needing Attention," and the other "Some Helpful Suggestions."[4] The teacher or supervisor who is provided with such a form but who fails to record on it questions and suggestions from time to time, is in all probability doing unsatisfactory work in supervised study.

Course	Week	Minutes Devoted to Supervised Study						Percent of Time
		Mon.	Tues.	Wed.	Thurs.	Fri.	Total	
History	Sept. 3-7	30	20	0	0	25	75	50

FIGURE II—FORM FOR DAILY AND WEEKLY CHECK ON TIME DEVOTED TO SUPERVISED STUDY

Other technics—Many progressive teachers and supervisors who have adopted supervised study make use of the Morrison *Sustained Application Profile*.[5] On the left side of a vertical line are indicated the nature, number, and length of distractions for a given pupil, and on the right side of the same line are indicated the nature, number, and length of the periods of application for the same pupil. The efficient use of this profile gives immediate and convincing evidence of what goes on in the case of a given individual during supervised study.

Many teachers and supervisors are also using the Maddox *Group Application and Attention Chart*.[6] This chart facilitates the simultaneous recording of the nature, number, and length of distractions involving all pupils during a given class period. It also indicates the percent of application for each pupil and for the class as a whole during any minute or phase of the class period.

[4] See: Maxwell, C. R., and Kilzer, L. R., *op. cit.*, p. 362.
[5] See: Morrison, Henry C. *The Practice of Teaching in the Secondary School*. Chicago: University of Chicago Press, 1931. Chapter 9, "Sustained Application," p. 141-57.
[6] Distributed by the University of Chicago Bookstore, Chicago, Illinois.

Conclusion—Still other technics of appraisal might be described, but such description is not necessary to fulfil the purpose of this article. The alert teacher and supervisor will probably wish to make adaptations in the technics already presented, and will also devise new technics not mentioned here. The use of technics such as those here described will not only help to *evaluate* supervised study but will help to *improve* supervised study as well.

THROUGHOUT the history of educational endeavor much emphasis has rightly been placed on the *way* in which the learners do their work, because it has long been recognized by the ablest leaders in the field that *how* a thing is worked at is of more importance than *what* is actually being done or learned. This is true because the method of work employed by a learner in the performance of his tasks develops as a natural by-product certain sets of habits that make him personally efficient or inefficient in the performance of his future tasks.—Book, William F., *Learning How to Study and Work Effectively*, Ginn and Co., 1926, p. 462-63. (Quoted by permission of the publishers.)

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CHAPTER VI

EVALUATING SOCIALIZING EXPERIENCES

EDITORIAL COMMENT

IN RECENT YEARS a variety of special activities, sometimes referred to as "extracurricular," have been given an important place in progressive elementary schools. There is a widespread belief that such activities, if wisely administered, will contribute significantly to the essential objectives of education. Unfortunately, little or no objective evidence is available on this point. Owing to the limitations of present measuring instruments and the difficulty of controlling influential factors, practically no scientific experimentation has been carried on in this field.

The lack of adequate technics, however, does not excuse principals and teachers from evaluating these informal activities by the best means available. At present it is perhaps more fruitful to focus attention upon the processes of pupil and teacher participation than upon the direct measurement of changes in pupil personality, altho the latter should not be neglected. Among the useful devices for appraising these processes are checklists of individual and group participation, running commentaries on pupil behavior during the course of an activity, and score-cards or rating scales for judging the product of an activity. Experiments utilizing controlled observation of the type described in the preceding chapter may yield the most valid and reliable results obtainable under present conditions.

This chapter reflects the difficulty of making adequate appraisals of the activities described. In the first article, Engleman discusses the general principles and objectives of informal dramatics, and outlines specific procedures for evaluating dramatic activity. Reynolds presents an informal appraisal of cooperative activities in a second grade, basing her judgments on the children's own reactions to the results of their work.

Keener reports an effort to evaluate a pupil newspaper project with reference to the number of articles submitted, their distribution among school grades, the interest of children who managed the paper, and the attitudes of pupils and teachers in general. Nettleton reviews the objectives of pupil clubs in her school, and gives the reactions of teachers and pupils to the club program. Etheridge concludes the chapter with a discussion of criteria for judging rural-school libraries and of the status of such libraries in her state.

While relatively little has been published concerning the systematic appraisal of socializing experiences in the school, the references listed on page 463 will provide a background for further study of this problem.
—*Editorial Committee.*

AN APPROACH TO THE APPRAISAL OF INFORMAL DRAMATICS

F. E. ENGLEMAN

President, New Haven State Teachers College, New Haven, Connecticut

THIS DISCUSSION of evaluation in the field of informal dramatics is based on two assumptions: (1) that informal dramatics involve relatively free interpretations of ideas and emotions thru the media of voice and bodily expression; and (2) that altho measurements reducible to mathematical terms are largely inapplicable, those more elastic technics for judging and evaluating are practicable and, in fact, indispensable to the child's greatest growth in dramatic ability. Procedures of the latter type are flexible in content, form, application, and interpretation. They permit the appraiser to make his judgments, to a large degree, in terms of a particular dramatic situation and the results sought in that situation.

WHO SHOULD EVALUATE INFORMAL DRAMATICS?

Probably all will agree that the most effective appraisal calls for understanding, judgment, and discrimination on the part of the learner as well as on the part of those who assist with the learning. The evaluation of a dramatic experience may be made by (1) the individual pupil, (2) small groups within a classroom, (3) the whole class, (4) the teacher, (5) the principal or supervisor, and (6) outside groups who participate as an audience. The responsibility for appraisal should be shared by all who participate. If the teacher or the supervisor alone assumes this responsibility, the child's growth in judgment, in creative powers, and in self-dependence is curtailed. Moreover, the assumption of sole responsibility by the teacher lessens the child's sense of satisfaction in completing a satisfactory job, and the sense of humbleness which should come to him after participating in an ineffective dramatic production. Probably the most successful appraisal results from a sharing of judgments, because this leads to common understandings and therefore yields the most valid and acceptable criteria for judging dramatic activities.

WHEN SHOULD APPRAISAL BE UNDERTAKEN?

Evaluation of a dramatic interpretation must be a part of the interpretation itself. The concept of the thing to be interpreted is, or should be, the result of careful thought and judgment which are in themselves evaluations. As the interpretation proceeds—be it a simple characterization of a single person, one emotional experience, or a

whole drama of human experiences—evaluation on the part of the performers is a necessary parallel. Interpretation of ideas involves both intelligent thinking and emotional feeling. A sort of measurement is involved, then, when the individual first determines to produce an interpretation, when he chooses what he is to interpret, when he is clarifying his concept of the thing to be interpreted, when he is rehearsing, when he is actually presenting the idea or ideas, and when he looks back upon the completed production, either in whole or in part. One of the chief responsibilities of the teacher is to determine the degree to which the children evaluate their work while the dramatic activity is in process.

OBJECTIVES OF INFORMAL DRAMATICS

Clearly defined objectives are essential to any effective program of evaluation. Such objectives as the following, with even more detailed analysis of each, should be in the consciousness of every elementary-school teacher. Some of these may well be brought to the attention of the children, while others should be kept in mind only by the teacher. The writer has not attempted to make a comprehensive list of aims, or to rank them in order of importance except in case of the first, which in his judgment is the basis of success in informal dramatics. This objective must be approached first; then the finer technics which call for more detailed analysis may be introduced.

1. Release of the child from the inhibitions, formalisms, fears, and self-consciousness which inevitably prohibit the release of self and the freedom to create and express inner feelings or personal understandings. (This requires a relationship among pupils, teachers, and their environment which will stimulate self-respect and an appreciation of differing personalities.)
2. Growth in creative expression and in ability to plan and shape the play, including the ability:
    a. To make up original plays based on the child's own thought and imagination
    b. To plan plots and scenes in a logical and systematic fashion
    c. To solve cooperatively problems of acting, character portrayal, properties, and costumes
    d. To make costumes, settings, and properties
    e. To plan and act out plays based on stories
    f. To create the necessary dialog, avoiding conversation which is trivial and which does not advance the plot or characterization.
3. Growth of skill in speech technics, including the ability:
    a. To take part in a play with poise, identifying oneself with the character in the play
    b. To improvise
    c. To speak in pleasing, well-modulated tones, using different shades of expression
    d. To use posture, gesture, and facial expression appropriate to the character and situations
    e. To use pantomime as part of the speech, action, and characterization of the play

f. To say lines in a conversational manner
g. To speak audibly, sending the words out to the front of the mouth
h. To increase the volume of the voice without raising the pitch
i. To articulate distinctly, taking special care to pronounce both the consonant and the vowel sounds of little words like *just* and *of*, without being pedantic
j. To speak with emphasis on the important words, being careful not to drop the last word in the sentence
k. To increase the vocabulary, using appropriate words and phrases from the story
l. To keep the right time or tempo of the play, responding to cues promptly and speaking at the rate one would use if thinking the lines for the first time.

4. Growth in knowledge and appreciation of drama, including the ability:
   a. To discriminate between the good and poor in radio playlets, moving pictures, and stage plays, distinguishing the cheap, exaggerated melodrama from the drama which is plausible or true
   b. To become acquainted with some of the better programs, cultivating a taste for well-made plays and beauty of language
   c. To catch promptly the mood of a dramatic presentation, whether one of adventure, humor, pathos, or fantasy
   d. To appreciate pleasing voices and the beauty of the spoken word
   e. To enjoy beauty in costumes and settings.
5. Growth in desirable reading habits,[1] including the ability:
   a. To imagine vividly the persons and the action in the story
   b. To visualize clothing, weapons, houses, and other details in the background of the story
   c. To enjoy characterization in a story, seeing logical relationships between character and action
   d. To enter imaginatively into the feeling and actions of children in other lands, seeing universal human nature in diverse surroundings and customs
   e. To experience history vicariously, comparing presentday life with that of earlier people.
6. Growth in social attitudes, including the development of:
   a. Qualities of leadership and initiative
   b. Independence, resourcefulness, and ingenuity
   c. Cooperation and teamwork in planning and producing a play
   d. Desirable attitudes toward right and wrong, toward qualities of character and personality (as in dramatizing stories of King Arthur), and toward other persons
   e. Ability to criticize intelligently, constructively, tactfully, and impersonally.

SOME TECHNICS OF APPRAISAL

Since evaluation of informal dramatics is to be the responsibility of both learner and educator, and since evaluation must be carried on continuously in many different types of situations, the available methods of appraisal overlap considerably and are largely descriptive

[1] Dramatization, because it is largely a process of visualization, helps to develop in the reader the power to form clear mental images. Thus, dramatization not only increases the child's enjoyment of reading, but it vitalizes and enriches the study of history, geography, and other subjects.

in character. The application of these methods must be governed by the objectives which the teacher has accepted, and by the maturity of her pupils. Standards, criteria, and specific checking devices for measuring growth in dramatic activities must develop gradually as children are led to conceive of and to appreciate the finer technics of dramatic interpretation. If the finer technics are introduced before a reasonable degree of power in free expression is achieved, there is danger that adult standards and adult methods of analysis will be imposed too soon. When adult-conceived perfection becomes the goal, the whole process becomes so formalized that child growth in creative self-expression and dramatic interpretation is stifled. The following procedures of appraisal, then, must be taken as merely suggestive of what may be done to measure growth in informal dramatics in any specific school situation. The procedures are listed first and then described in the same order.

1. Comparing written descriptions of dramatic experiences at different dates
2. Preparing a running commentary on the behavior of individual pupils in connection with dramatic activities
3. Joint use by teacher and supervisor of a check-sheet for appraising a particular dramatic production of the pupils
4. Use of a class check-sheet for recording pupil participation in various phases of dramatic activity
5. Self-criticism and group criticism by the children
6. Helping pupils to select and accept standards for judging dramatic presentation in general.

Comparing written descriptions of dramatic experiences—The following statement illustrates a type of activity which may be recorded in detail and later compared with a similar activity involving the same pupils:

This activity developed in the fourth grade of a typical American city school. The principal had suggested that this class share some dramatic experience with the rest of the school at an assembly period. The teacher then raised the question, "What shall we do?" After a short discussion, it was agreed that each pupil would do some reading during the week with the purpose of discovering a suitable story which could be dramatized on the stage.

When the stories were presented, it was found that three children had selected the same story, "The Wild Swans." As their selection seemed popular the teacher said, "I know a place where you can find that same story, but changed and written in another way."

"Maybe there are more than two stories about the same thing," interjected a bright little girl.

"Let's see if we can find some others," urged another. So it was agreed that a further search would be made for other versions. When the search ended, six different versions of "The Wild Swans" had been discovered.

To select the best one of the six versions became a problem. Finally it was decided that the story could be made into a seventh version, incorporating the various points which the pupils liked and which would best serve their purpose. One child, for instance, pointed out the desirability of using the version with the greatest number of boy characters, since the room contained more boys than girls. Another warned that one version had a part which could not be staged properly.

The organization of a play based on the story was next discussed, and the general divisions or scenes were agreed upon. Then committees were set to work organizing each scene, suggesting the action, and in some places preparing the script. Other committees had the responsibility for the back drops, scenery, and costumes, while another group began planning the staging and furnishings. Still another group set to work to list the characters and place them by scenes.

At the next discussion period the class had reports from all committees, criticized them freely, and suggested improvements. A cast was then chosen. This was done by first analyzing the character to be portrayed and then selecting the person who could best portray that individual. Many factors of social behavior and personal fitness were overlooked by the children. Coaches, together with understudies for each member of the cast, were also chosen for each scene at this discussion period.

Rehearsals and the creation of stage scenery began at the first opportunity. In fact, time for such work had to be decided upon. This was done in the full light of other school tasks which were under way and which had to be continued. As the production proceeded, adjustments, criticisms, and evaluations were participated in by all. Personal responsibility for a given task brought self-criticism of that task.

All the children shared in two complete rehearsals. At this time, individual pupils offered suggestions relative to moods, facial demonstration of emotions, bodily movements of actors, their position on the stage, voice inflection and volume, good and poor descriptive words, good and poor sentences, action which needed to be enlivened, parts where there was too much talk and not enough action, and many suggestions relative to staging and scenery.

After the play was given, the class held another discussion relative to the merits and weaknesses of the finished product. In this discussion the principal and three members of advanced classes who had been in the audience were asked to participate, and they made a number of helpful suggestions.

A description similar to the above, with details filled in concerning the part each child played and the degree of his success, gives the teacher a "photograph" of her class as it actually appeared at a given time. If this description is compared to a similar picture of the same group at an earlier or later stage of development, growth can readily be detected. This technic of appraisal may be applied by any teacher.

A running commentary on pupil behavior—School people are increasingly realizing the significance of anecdotal records in revealing the behavior patterns of individual children in a given environment. If the teacher will keep a simple diary of the dramatic activities of children, this record will help not only to diagnose specific weaknesses and strengths but also to indicate general progress. A review of such records from time to time will reveal a great deal about the direction and extent of changes in pupil behavior. The following is a segment of a simple record of one child's participation in dramatics:

September	16—Sat in impassive silence while playlet was being given.
"	28—Showed by facial changes a degree of enjoyment at a review demonstration.
October	16—Volunteered to take a non-speaking part in a dramatization.
"	24—Stated that she thought one player acted "just like an old lady."
"	29—Painted tree to be used as part of a back drop.

November 6—Brought in a story from her reading which she thought could be dramatized.
" 10—Took a speaking part, but was too timid to suggest appropriate lines until given much help.
" 17—Impersonated by pantomime a field laborer hoeing cotton. Showed considerable understanding and gave a fair interpretation.
" 26—Named a book she had read and told of one character by saying, "She always talked like this: . . ." Then in a whining voice and with a sad face she repeated some of the character's words.
" 28—Suggested to another child that the latter did not speak so the audience could hear every word.

Check-sheet for judging an informal dramatic production—In using this method of appraisal, the teacher and supervisor independently apply accepted criteria to a given dramatic production, and indicate their judgments on a check-sheet. Since the desired development of the children is a result of the production in process rather than of a "finished show," the criteria need to be applied from time to time as the activity is going forward. The check-sheet used may be similar to the form illustrated below. The teacher and supervisor observe the children, underline the words which best describe their degree of development, and then compare sheets.

Characteristics displayed by children	*Ratings by teacher and supervisor*			
1. Freedom from inhibitions and fears	none at all	a little	considerable	very much
2. Imagination and creative power	none at all	a little	considerable	very much
3. Power to organize	none at all	a little	considerable	very much
4. Joy and interest in presentation	none at all	a little	considerable	very much
5. Insight into character	none at all	a little	considerable	very much
6. Power to discover effective dramatic episodes	none at all	a little	considerable	very much

Further measurement may be carried on by describing evidences of growth in greater detail. Such crude scales may be refined by teacher and supervisor until they can be used as effectively as handwriting and composition scales.

Check-sheet for recording individual pupil participation—Altho participation in a given phase of dramatics does not in itself indicate growth, it does indicate certain fields of interest. Moreover, under proper guidance and constant evaluation, it may be assumed that vigorous participation will enhance growth in a given direction. It likewise may be assumed that in those areas where there has been no participation, growth has been curtailed. The class check-sheet helps to reveal each child's activity or lack of activity in the various phases of dramatic experience. Figure I contains merely a suggested analysis of the various areas of participation, together with the hypothetical

RECORD OF INDIVIDUAL PUPIL PARTICIPATION

Pupils	Actively planned organization of dramatization	Helped group with script	Directed play	Acted major part	Acted minor part	Searched for and chose selection	Painted scenery	Selected stage materials	Made suggestions to group	Planned scenery	Selected a cast	Was an understudy	Stage hand	Announcer	Pantomimed	Individual performance	Showed appreciation of good interpretation by others	Reported a radio playlet with criticism	Planned and presented an original dramatic book review
John Doe				✓✓ ✓	✓ ✓						✓	✓ ✓			✓✓ ✓	✓ ✓			✓
Mary Doe	✓✓ ✓	✓✓ ✓	✓			✓✓ ✓✓		✓ ✓										✓ ✓	

FIGURE I—SUGGESTED FORM FOR RECORDING PARTICIPATION OF INDIVIDUAL PUPILS IN DRAMATIC ACTIVITIES

records of two pupils. The form of the check-sheet will vary according to the judgment of the teacher.

It is obvious from Figure I that John Doe is doing much with acting, but very little in the field of creative planning or staging. On the contrary, Mary Doe is giving her energies to creative production and is not active as an interpreter.

Self-criticism and group criticism by the children—Possibly no evaluation is so valuable as that which comes naturally as a part of the dramatic activity itself. When the learner is considered a discriminating agent, and is made to assume responsibility for the content and quality of his work, self-appraisal is inevitable. To make informal dramatics most successful, the teacher must encourage children to choose, to criticize, and to evaluate such activities. In the fourth-grade activity described earlier, self-criticism, small-group judgment, teacher measurement, class thinking, and audience appraisal all served to improve the activity as a whole. Evaluation was an ever present factor from the initial stages of production to the "post mortem" following the final performance.

Helping pupils select standards for appraising dramatic presentations—Pupils should help to formulate their own criteria for judging dramatic presentations of all kinds. Such criteria may be arrived at by:

1. Discussion and consensus of class opinion
2. Using authority as found in certain books
3. Considering the judgments of parents and other adults
4. Obtaining the opinions of teachers.

When appropriate standards have thus been set up, they may be kept before the children by making a wall chart, writing them on the blackboard, or writing them in notebooks. By such devices the pupils are encouraged to be critical of radio, screen, and stage productions as well as their own dramatic activities.

CONCLUSION

While appraisal of pupil development in the field of informal dramatics is a difficult task and probably can never be accomplished with mathematical precision, certain technics may profitably be utilized to identify changes in interests, attitudes, and behavior. That an individual must know his destination before embarking on a journey, all will agree. That he must check from time to time to determine how well he is progressing toward his destination is but common sense. Procedures for determining both of these essentials must be employed by successful teachers of informal dramatics. The destination and the devices for measurement in any particular case are necessarily dependent upon the traveler's interests and needs, and upon the skill and wisdom of the pilot.

EVERY SURVEY of status and needs implies the acceptance of certain goals. Determining where we are is a process of measuring the present situation against a set of criteria. These criteria are, in turn, dependent upon the goals we have consciously or unconsciously set up. If we change the desirable ends, there will be a consequent revamping of the factors to be observed. We tend to see in any situation the presence or absence of what we are looking for, and to ignore other manifestations no matter how significant they may be. Obviously, if the felt need is to be a common need, the principal must enlist the cooperative endeavor of teachers and pupils in setting up the goals.—Ginsburg, Morris B., p. 515 of this yearbook.

RESULTS OF PUPIL SHARING IN RESPONSIBILITY FOR CLASSROOM SURROUNDINGS

HELEN M. REYNOLDS[1]
Director, Kindergarten-Primary Education, Seattle, Washington

IN A GOOD HOME the parents consciously plan their surroundings and opportunities to include or represent those interests in life which seem to them worth striving for—a view of the hills, a glimpse of the sea, a garden spot, pets, musical instruments, a workshop, toys, good books to read, a chance to share responsibilities. Wise fathers and mothers try to give children an appropriate part in the family merry-makings, a share in the family feast days, and an understanding of the family difficulties and problems in proportion to their ages. We believe that children should have similar opportunities and responsibilities in the school.

We are trying in Seattle to base our work on an adaptation of the philosophy of William Morris: "I shall have in my home nothing which I do not know to be useful and believe to be beautiful." "We" means the teachers, the children, and others of us who are trying to help make the school life an extension of the good home life. We would like to have in the schoolroom nothing that we do not know to be useful, nothing that is not filled with meaning to the children, and all things as beautiful as we can make them. We are trying to rid ourselves of high-hung pictures and prints of the Parthenon in classrooms for seven-year-olds. We see little place for decorative borders made by the teacher. We believe in planning for a workshop and a library as opportunities for all the children.

This article enumerates a variety of items in the classroom environment of a group of second-grade children, and presents the children's own descriptions of these items as recorded by the teacher.[2] Obtaining reactions of this kind from children is admittedly a very informal and quite unscientific method of evaluation. It does, however, give teachers and supervisors an insight into child growth that is difficult or impossible to obtain otherwise. In this sense the procedure on which this discussion is based may be considered an appraisal measure, altho the results cannot be expressed quantitatively and the amount of social growth cannot be determined objectively.

[1] With the assistance of the pupils in Grade II-B of the Seward School, Seattle, and their teacher, Miss Clare L. Wilson.

[2] These descriptions were prepared as a group statement by the children, written on the blackboard by the teacher, read by the children, corrected, and then sent to the writer of this article. The children were told that the writer wanted to tell the story of their room to some other interested teachers and children.

Pupil-made books—The children were asked to list all the spaces, places, or objects in their room which they liked and found interesting. Among the items listed was a book about their city which the children had made themselves. The preparation of this book served the dual purpose of stressing the children's responsibility for making their classroom a place of significance to them, and of emphasizing the utilization of our natural and industrial environment outside the school. The children's choice of "Our City Book" reflects their interest in this purpose.

OUR CITY BOOK

We have a big book about our city. It looks much like our neighborhood book because it is made on wrapping paper, and because we had to hang it on the wall so that we could read it. We have not finished it yet. We have only four pages done. We have written about "The Markets," "The Hotels," and "The Policemen." We are planning to have this book finished soon. Its title is, "Our Beautiful City—Seattle, Washington."

An appreciation of the immediate neighborhood also is included in our plans for the second grade, B class. The record of excursions and neighborhood stories for this class is given in

OUR NEIGHBORHOOD BOOK

We live in a very beautiful neighborhood, so we made a great big book about it. Every day we made a new page for our book. Miss Wilson printed them with her big pen and we drew pictures for them. When the book was finished Miss Wilson put all the pages together and hung the book on the wall. Each page looks like a big reading chart. The book tells about "The View of Lake Union," "The University Bridge," "The Art Museum," "Volunteer Park," "The University Museum," "Seward School," and "Rogers Playfield."

When we have finished our work it is fun to read this big book that we made.

What evidences of cooperative planning do these two descriptions give? The following seem to be outstanding:

1. The children are quite clear as to their share in the making of the books.
2. They recognize at least part of the teacher's contributions.
3. They are growing in appreciation of "a very beautiful neighborhood."
4. They felt in making their record of "our city" a consciousness of work accomplished and something yet to be done. They have definite plans for the use of "Our Neighborhood Book." There is always something for the children to do when they have finished their work in a room which they have helped to "make" and keep in order.

A class news magazine—Among the treasures of the room is listed the "Second-Grade News Magazine." The issue of November 9, 1936, with a manila cover on which is a drawing in color of "The Library Corner," was chosen by the children as the most interesting issue thus far. Its contents indicate the possibilities of the magazine as a means of discovering what happens over Saturday and Sunday that may contribute to the classroom difficulties or delights of Monday and Tuesday. In this issue are listed, among other week-end pleasures,

several desirable experiences. These may have been stimulated in part by the schoolroom discussions: four trips to Woodland Park, going to see the government locks, going to the airport, and finding a poem to bring to school. The children who habitually write about "going to shows," and the one whose news is always concerned with "what father is doing for mother out at camp" may give the teacher an insight into the basis for steadiness or flightiness of personality.

Following is the children's statement about the magazine:

SECOND-GRADE NEWS MAGAZINE

Every Monday we make a news magazine about the things we saw, or heard about, or *did* over the week end. Each child writes his news item and draws a picture for it. Then the news and the pictures are put into a book. Someone draws a cover picture and Miss Wilson prints the name of the magazine and the date on the cover page.

Everyone likes to read all the old magazines.

At present all the issues rest in a magazine rack in the library corner. Several children have specially called the writer's attention to this rack.

The following comment of one parent to the teacher suggests the motivation which the preparation of the news magazine provides for correct spelling and writing: "We've been so glad because Nancy is taking such an interest in learning to write and spell well, because she started out so poorly. Now she wants so badly to be able to write a good news story for the news magazine."

Dictionaries made by the children—The preparation of the news magazine—this carrier of home and neighborhood happenings into the classroom—involved the making by each child of his own dictionary, a project described thus by the children:

DICTIONARIES

Sometimes we need to find out how to spell certain words. We made a dictionary. It has a page for every letter in the alphabet. When we need to know how to spell a word we look to see if it has been written in our dictionary. If it has not been written there we look in our spelling book and if it is not there we ask Miss Wilson to write it in our dictionary. We open our dictionary to the right page before we take it to Miss Wilson.

In this project the children are helping to make some of the necessary equipment for their other work. They are aware that they must pay attention to words, and they are working toward the use of what grown-ups have found *they* need—a dictionary.

Equipment for handling financial problems—The following descriptions of "Our Number Books," "Our Lunch Money," and "Our Number Charts" show that the room equipment takes care of the financial matters of this "children's cooperative." There is also available a set of arithmetic readers, *What Happened to Other Children in Arithmetic.*

The children even bring "grocery lists" from home if their parents are willing. One mother said, "We're quite amazed at Don's willingness to go to the grocery these days. He's so anxious to have a grocery list to take to school."

OUR NUMBER BOOKS

We need to know many number facts in second grade so that we can figure up our lunch money and our bank money and do other things that we need to do.

We keep a record of every number fact which we use. We keep this record in our number books. We made our number books ourselves and we keep them in our desks. We write every number fact we use in our book. If we've already had it and have already written it in our book we put a check near it. Some of them have many, many checks. The fact "1 and 0" has the most checks now. It has thirty-one checks.

OUR LUNCH MONEY

We have a cafeteria in our school. So many people bring money for their lunches. Each person who brings lunch money in our room writes his name on the lunch-money board, and he writes the amount of lunch money he has. Then he puts his money in the lunch-money purse. Later in the morning we check the money in the purse with the amount written on the board. We find out how much lunch money is in the purse. When the children are ready to go to lunch they get their money from the teacher.

OUR NUMBER CHARTS

We are trying to learn to count by tens and by fives and by twos. Some children can already do this. They write their names on the number charts. All but three children have their names on the number chart for counting by tens; all but six children can count by fives. Sixteen children can count by twos.

Thru the use of money in the lunchroom and in making bank deposits, the recording of the amount brought, the checking of the facts involved, and the accounting of their own achievements, the children are using arithmetical materials and learning to keep records of this use in an orderly way.

The library corner—The corner of the classroom devoted to books and magazines is described at length by the children, as follows:

OUR LIBRARY

We are glad to have a library for we enjoy it very much. Everyone likes to read at the library table. It is a pleasant place.

We have story books and poem books there. There are some "Weekly Readers," a puzzle book, and some magazines which children brought from home.

Some of the things that are in the library we made ourselves. There is a number book with pictures of our true number stories in it. "Our Address Book" and "Our Helpers" were made by the children in the room. Some children wrote poems for the library. David made a poem book to put on the table.

There are folders for "Poems for Fun," "Sea Poems," and one for "Autumn Poems." There are some magazines which were made by some other children in another school who are in the second grade, too.

We have a magazine rack near our shelves. Our second-grade magazines are in it.

Some of the girls made a table scarf in the workroom for the library table. Mary Jo brought a vase to make the library a more pleasant place. Joanne brought a funny monkey because it made her think of the monkey in one of our books. Shirley brought a funny man to hang near the monkey.

We use our library when we need to look for something in one of our books. We read there when we have finished our work.

There are five chairs in our library; one of them is a rocking chair which Shirley T. brought from home.

In this description we may note the children's evident pleasure, the idea that everybody reads in the library, that a variety of material to suit all interests is provided—story and poetry and puzzles. There are magazines from home and school-made books as well as child-written poetry. The children enjoy an exchange list as well as do grown-ups. "Do the same things happen at Fauntleroy School?" they ask. The library is properly furnished, with a handmade table scarf, a magazine rack, and amusing objects to make us smile whenever we look at them—"funny monkeys" and "funny men." The delight in collecting comes early, and a folder for sea poems is needed in our seaport town. The children know why the library is there. They may look for something or read for fun. The rocking chair is the latest acquisition. In bringing the chair for Shirley her mother said, "I'm sure Shirley will enjoy this rocking chair much more at school than she does at home. She is so thrilled about the room library here. She wants to give this chair for it."

Close to the library corner is the "Clean Hands Shelf," a special place for special treasures in books. Note that in their descriptive statement the children say "this week." This reminds us that "something new" and "something old" are good charm words in libraries as well as elsewhere.

CLEAN HANDS SHELF

On one of our window shelves we have some very beautiful books. This week we have a book called *Snippy and Snappy*. The kindergarten teacher, Miss Erickson, loaned us this book. We have some other good books there, too. We put up a "clean hands" sign because we wanted to keep these books especially clean. We call this shelf "The Clean Hands Shelf."

On a recent visit among the books in the library, the writer found *The Tugboat, Ola and Blacken, Trains, Poems of Today, A Child's Garden of Verses, Angus Lost, Silver Pennies, I Spent the Summer, I Go A-Traveling,* and *I Live in a City.* All of these are reflections of what is going on in the room or just outside.

Classroom exhibits—The recognition of achievement in any field is an incentive to continued effort. Their plan for "Good Work Places" is thus commented on by the children:

GOOD WORK PLACES

We have two places to put good work in our room. When someone has been especially careful when he made a picture in the workroom, and if the picture tells a story, Miss Wilson puts the picture on a piece of cardboard and hangs it on the wall. After it has hung there for a week it can be taken home.

There is a shelf where we keep clay work, woodwork, sewing, printing, or anything else that has been well done in the workroom.

The frequent changing of the exhibit offers all the children a chance to share the joy of recognized achievement.

Children as well as baseball fans find a bulletin-board useful. In the following paragraph the children note the values evident to them in this joint ownership of

OUR BULLETIN-BOARD

Sometimes we find something very interesting in the newspaper, or sometimes there is some important thing we all need to know. We have a bulletin-board to use for such things. At the top of the board it says, "Interesting Things." Anyone may use the bulletin-board. Sometimes Miss Wilson uses it and sometimes the children use it. Now the notices on the board tell about our banking and about some daffodil bulbs which Don brought. There is a page of poems which were written by some other second-grade children. There is a neat paper which Shirley T. wrote when we banked this morning.

On a recent visit by the writer to a I-B room, a small child pointed out a bulletin-board on which was displayed a labeled picture of a boy with his dog. "That got changed since yesterday," said the child. Interesting, suggestive changes in posted materials offer stimulation to thinking. We all pause to see what is new in our favorite shop windows, and we all ignore the drug store with time-yellowed bills and posters. The children's statement includes the standards for any good bulletin-board, which are as follows:

1. It must be available to all.
2. It must display matters of interest or importance to all.
3. It must provide fresh material.
4. It must provide a variety of valuable material.

The fun cupboard—There is in this room one of those narrow-from-front-to-back cupboards, of door size, which are used often to harbor odds and ends that usually need to be cleaned out but often remain long after their usefulness is over. The door, always open at the wrong moment, has been removed and the shelves painted a warm yellow-green with red edges. This to the children is

OUR FUN CUPBOARD

We have a "fun cupboard" in our room. It is painted with bright colors. There are toys, games, colored paper, and other things to have fun with in this cupboard. On rainy days we come in and play with the things in the fun cupboard. We use these things sometimes when we have finished our work, too. There is a drum, a triangle, and some bells which we use some days when we have music and play the victrola.

The children in our room brought the things for the fun cupboard. We enjoy playing with these things very much.

Here and in the "museum" is provided a place for the contributions of the children: a red and black drum, a rolly polly, a green canoe, a

small red and white rocking-horse, a red cloth elephant, a red toy truck, a gray Teddy bear, and colored paper. When we are resting for a moment there is always something pleasant to look at. There are always things to draw.

Museum and sand table—The museum is an outgrowth of the science interests fostered by the classroom teacher and by the science room upstairs, where the younger children are invited to visit.

THE MUSEUM

We have a museum in the back of our room. There are many interesting things in it. Different children in our room brought these things. They brought them because they thought that they were interesting for other children to see. There are some big shells, some caterpillars, an Indian doll, a Japanese doll, some gold, some gourds, and some petrified wood in the museum. Each thing has a label to tell what it is and where it came from. Patty and her mother made a carrot Indian for the museum. Almost every day someone brings something new for it.

In the back of the room is a sand table, also the possession and work of the children. The two purposes served are thus revealed by them:

OUR SAND TABLE

We like our sand table very much. Each week we have a different story in it. This week Raymond's group made a story of the Four Bears. There is a little girl named Bright Eyes in the story. She is hiding in the hole from the bears. Her little dog, Scratch, could not get into the hole because it was too small so he tried to hide outside. The bears did not hurt her. Their names were Gruff, Huff, Puff, and Tiny.

We did not know the story but Raymond's class told it to us when they showed us the sand table.

OUR TERRARIUM

Some children in our room are making a terrarium in one side of the sand table. They put gravel in the bottom of the sand table before they put in the dirt because Miss McKelvey (the science teacher for the older children) said that would help the water to drain off the dirt when the children watered the plants in the terrarium. They are bringing moss, ferns, and little plants to grow there.

The pool was made by putting a flat glass dish down into the dirt and filling it with water. Raymond put stones and moss all around the top of the dish so that it would look like a pond. He is going to bring his turtle tomorrow. We are trying to find a lizard for the terrarium.

A mother's comment on the sand table gives us Dorothy's view of its possibilities: "I've come to see the sand table. I hear it has a bear story in it and that Dorothy made a bear for it and 'shellacked it and everything' all by herself."

Other items—There are other significant things in the room: "Health Rhymes" by students of the Calgary Normal School, sent by some visitors from British Columbia; a riddle written on the board by the teacher:

Mary brought me to school today. I am in a sack. Mary says that you may eat me. I am red. I grow on a tree. What am I?

An invitation from the kindergarten:

The kindergarten has invited us to their room to see the white rat. We will go at 1:30 o'clock this afternoon.

Also on the blackboard, the following financial news:

Twenty children banked this week. There were forty children here so just half of us banked.

Among other posters containing poems made by the children is one on

THE SHIPWRECK

There was a ship sailing high
There was a bird flying low
The waves were rocking so
The captain sent for help
He gave the message to the bird
The bird came back with help.

—PATTY M. DOROTHY
JANET EARL

The children also have one blackboard for their own use exclusively. On this they may write or draw when their other work is done.

Caring for the room and its contents—This room with its many possessions must be taken care of, and this is accomplished by committees. The children describe this work as follows:

OUR COMMITTEES

We have housekeeping committees to keep our room clean. Some of these committees do their work after school, some before school, some at recess, and some during school.

We have a committee to fill the paste jars, a committee to water the flowers, one to sharpen the pencils, one to keep the cloak hall clean, one to dust the museum, and one to keep the fun cupboard neat. We have a committee to arrange the benches for reading classes, a committee to wash the boards and clean the erasers, and we have a committee to keep the library in order.

We have a hostess and inspector, too.

Miss Wilson prints the names of each committee on a big piece of paper so that we won't forget our work.

This sharing of the care of the room serves many ends. A teacher in another classroom describes the situation thus: "I used to spend an hour after school in the care of the room doing what the children now do in ten minutes. They take a personal pride in its care and are thoughtful about making work for each other or the janitor." One of the prominent articles in the cupboard is an inspector's badge.

One parent comments: "I'm anxious to know how you get George so interested in doing things around the schoolroom. He talks a great deal about washing boards and dusting at school, and seems to enjoy that work, but we have a terrible time getting him to help with anything around home."

The school workroom—Altho it is not a part of their classroom, the children feel that their choicest possession is the workroom which they share with four other groups of children.

OUR WORKROOM

We have a workroom in the basement of our building. We make things for our room during our work period there. Some children make things to take home, some children sew and knit, some children print things for our library table. Soon we're going to start making Christmas presents in our workroom.

There are five work benches in this room, five easels, a clay table, and a long wallboard for painting or drawing. There is a big block table and a cupboard full of blocks. There are several tables and a shelf with books that tell how to make things. There is paper, paint, clay, crayons, and all kinds of materials for children to make things out of.

We take very good care of this room because four other groups of children use it.

We have two big cupboards to keep our things in. We have one big lumber shelf for our lumber.

All the products of the workroom must serve some good purpose, either of the group or of an individual child. The room is the children's to use, to keep in order, and to leave in good condition for the next group.

Conclusion—One approach to the appraisal of a school program is to answer this question: Is the classroom the possession of the children and their parents as well as of the teacher? In finding the true answer, it is helpful to obtain the reactions of the children themselves to the various elements in their classroom environment. In the classroom described above, the children have evidently contributed the following to make the room a center of cooperative ownership and responsibility:

1. Accounts of experiences at home, in the street, and on trips—told to the other children and to the teacher
2. Records of these experiences in stories written, in pictures drawn, and in articles made
3. Gifts and loans of objects brought from home or collected on trips
4. Books loaned by the home
5. Appreciation of the contributions of others
6. Work in making needed objects for the school
7. Care of the classroom
8. Persistence of effort day by day
9. Continued use of technics in reading, writing, and spelling
10. Continued use of arithmetic in cases where accuracy counts.

To these contributions of the children the teacher has added:

1. Understanding of the viewpoints and interests of the parents and children—the beginning of community living
2. Contributions in stories of her own experiences and collected treasures
3. Continued efforts to lead the children into new fields of interest in science, in story, in poetry, in music, and in art
4. Continued planning for utilization of the children's contributions in teaching reading, writing, and spelling
5. Continued guidance of the children's efforts to carry responsibility
6. Good taste and careful attention to the elimination of unused materials, so that the room would not become crowded and confused.
7. Continuous attention to details so that the children would retain their feeling of responsibility for completing all work with good standards of workmanship.

A number of other factors—the cooperation of the principal in providing the workroom and needed materials, the aid of other teachers and older children, and the help of the custodian—have been essential to the success of this experiment in cooperative living.

PUPILS likewise may properly have a part in appraising the school. Their opinions are not always well founded and must be interpreted with great care, but such opinions will often help teachers and principals in making their own judgments of school policies and procedures. Certainly no school activity can be considered satisfactory which produces dissatisfaction or discouragement in a considerable proportion of the children. Moreover, the school has an obligation to teach children to be honestly and constructively critical of their work and of their social institutions (of which the school is one).—Chapter I, p. 234-35 of this yearbook.

JUDGING THE SUCCESS OF A SCHOOL NEWSPAPER

EDWARD E. KEENER
Principal, John Hay School, Chicago, Illinois

THE NEWSPAPER PROJECT discussed in this article was carried on in the John Hay School during the spring semester of 1936. The newspaper was prepared and published entirely by pupils under the supervision of a teacher. The management was in the hands of a beginning eighth-grade class, but the collection of material for publication was largely a function of the Press Club, which consisted of a reporter from each room in Grades III to VIII, inclusive. The members of this club met once a week to discuss ways of gathering news and other articles. The paper was mimeographed in the school by the pupils.

Evaluation of the project covered the following phases: (1) the number of articles submitted for publication, (2) the distribution of articles by school grades, (3) the interest manifested by those who managed the paper, and (4) the attitudes of pupils and teachers in general toward the publication. While this little study was not as complete as one might wish, it gave the principal some basis for judging the success of the newspaper enterprise.

Increase in number of articles—During the semester four issues of the paper were published. Each issue included all the usable articles submitted. The total number of articles published in each issue was as follows: March, 26; April, 42; May, 43; and June, 66.

The growth in the number of articles submitted and published is some indication of the appeal of the paper. At first many pupils were reluctant to submit articles either because they were not interested or because they felt that they were unable to write for publication. When they had read articles written by their classmates, however, they were encouraged to make a try at writing. Consequently an increasing number of articles were written each month. Altho it was possible to publish all usable articles submitted in the four issues, it would probably be impossible to continue this practise indefinitely. The selection of material would have to become more exacting because of the necessary limitation of space.

Increased number of classes contributing—The accompanying table shows the percents of all articles contributed by the various classes to each of the four issues. Altho contributions for each issue were solicited from every class, the first issue was written chiefly by the VIII-B class —the class which managed the paper. In the first issue this class contributed 88 percent of the articles, and in the last issue only 33 percent. The range of grades contributing to the last issue was from the kinder-

garten to Grade VIII. There were six classes (half-grades) that did not contribute an article to any of the four issues. This was probably due to the failure of the reporters in those classes to promote interest in the paper and to secure the help and cooperation of the teacher.

Changed attitudes toward managing the paper—The interest of members of the class that managed the paper grew rapidly during the semester. At first some were hesitant to assume responsibilities about which they knew little or nothing. Before the close of school, however, they were eager to manage the various phases of publication. In fact, relays of pupils were used in many of the activities. The last issue of the paper was produced almost wholly by the pupils. They secured the articles, edited them, typed them, arranged them in columns, cut the stencils for the mimeograph, operated the mimeograph machine, stapled the sheets together, sold the papers, and kept an accurate record of their cash accounts. The children gladly came to school an hour early and remained an hour or two after school whenever this was necessary in order to have the paper out on time. It is hardly surprising that they

TABLE 1—PERCENT OF ARTICLES CONTRIBUTED BY EACH CLASS TO THE FIRST FOUR ISSUES OF A SCHOOL NEWSPAPER

CLASS	MONTH OF ISSUE			
	MARCH	APRIL	MAY	JUNE
(1)	(2)	(3)	(4)	(5)
VIII–A	..	5	21	17
VIII–B	88	59	49	33
VII–A	..	..	..	..
VII–B	..	14	7	14
VI–A	..	12	5	2
VI–B	..	..	..	6
V–A	4	..	9	3
V–B	4	..	..	6
IV–A	..	5	..	2
IV–B	..	..	..	..
III–A	..	..	..	..
III–B	4	5	5	15
II–A	..	..	..	..
II–B	..	..	..	..
I–A	..	..	..	..
I–B	..	..	4	1
Kindergarten	..	..	..	1
All classes	100	100	100	100

Read table: In the first (March) issue of the newspaper, 88 percent of the articles were contributed by pupils in the VIII-B class, 4 percent by the V-A class, 4 percent by the V-B class, and 4 percent by the III-B class. Similarly read figures for the other three issues.

gained a great deal, not only in the ability to use English correctly, but also in office skills and in the exercise of initiative, reliability, and industry. One boy who had been a serious disciplinary case became eager to help with the publication of the paper. He wrote at least one article for each issue and did much of the work of mimeographing. There were no more disciplinary troubles so far as he was concerned.

General attitudes of pupils and teachers—The general opinions of both pupils and teachers are now very favorable toward the publication of a school newspaper. As indicated above, the interest of pupils is shown by the increasing number and the widening distribution of articles submitted. This interest is also indicated by the increase in circulation of the paper, which grew from about 300 copies at three cents per copy for the March issue, to nearly 500 copies at five cents per copy for the June issue. Some comments by pupils are quoted below:

> An elementary-school newspaper is a fine thing for the school. It helps the school as a whole because it gives the pupils practise in typing articles, cutting stencils, and running a mimeograph machine. In drawing the cover for the paper, it shows the pupils how good they are. It cultivates an interest in news of the school and makes the pupils want to write. It creates a strong school spirit. When the pupils give sales talks they gain confidence in speaking before an audience. Altogether it is a fine thing for a school.
>
> I believe an elementary-school newspaper is a good thing to have. It makes the pupils eager to write good English in the articles they send to the paper so that it will be put in the paper.
>
> The newspaper gives the pupils who are working on it, training in how to use the mimeograph, how to cut stencils, how to arrange the pages, and many other things.

The teachers agree that a newspaper furnishes motivation for the correct and effective use of English, builds up a wholesome attitude toward the school, and is a valuable means of carrying information to parents concerning the school activities. A mimeographed paper is preferred for these purposes because it gives practise in office procedure which is not afforded by a paper printed outside the school.

AN INFORMAL APPRAISAL OF SCHOOL CLUBS

LULIE NETTLETON

Principal, Green Lake School, Seattle, Washington

THE VALUE OF CLUBS in the elementary school cannot be estimated in terms of cold figures or by means of standardized tests. Thus far, at least, it can be measured only by the subjective judgments of teachers and principal, based upon careful observation and study of the children's reactions to club work. To be considered successful, these small organizations must meet the approval of children and teachers as well as of the principal. They must demonstrate their worth in the form of increased inspiration, initiative, responsibility, and happiness of their members in working together for the good of the group.

Some objectives of club work—When the question of establishing clubs in the Green Lake School was raised, faculty conferences were held to discuss the probable worth of such activities to the children. At these conferences the principal and teachers presented and analyzed the values which they desired to see emerge from club experiences. Following is the list of desirable outcomes prepared, together with a few suggestions as to how the club program might contribute to these outcomes:

1. *Initiative*—to be developed by giving children a chance to suggest the kinds of clubs needed, to plan each club's program of activities, and to elect suitable officers.
2. *Leadership*—to be encouraged by giving children greater opportunity for exercising leadership in small groups than they had hitherto enjoyed.
3. *Community consciousness*—to be aroused by giving children the experience of participating and rejoicing in the accomplishments of the group.
4. *Sportsmanlike attitudes*—to be inculcated by means of games and other activities in which the children may learn to win modestly, lose gracefully, and make personal sacrifices if necessary for the welfare of the group.
5. *Civic responsibility*—to be achieved thru the children's experience in electing appropriate officers and in managing club affairs in an efficient, businesslike manner.
6. *Toleration*—to be developed by encouraging children to consider impartially both sides of questions which arise in connection with the operation and activities of a club.

Our experience has been that the pupils should be allowed to have a hand in suggesting the types of clubs to be organized. Such suggestions are accepted from any child who has something constructive to offer. If a suggestion is impractical the pupil making it is told why his idea cannot be put into effect at the time. No child should be made to feel that his ideas are not given adequate consideration. On the other hand, a particular club should not be organized merely because the children

want it. Sometimes an excellent idea for a club cannot be utilized because a suitable sponsor is not available. Without an adult sponsor who has enthusiasm, interest, a knowledge of the field to be covered, and an appreciation of the opportunities for pupil development, a club in any field of activity is likely to be worse than useless.

Teachers' opinions of various clubs—Some of the criteria used by teachers in evaluating the work of clubs are evident in their opinions of the several clubs in the Green Lake School. These opinions are as follows:

1. *Art Club*—worthwhile because its members experience the thrill of creating some beautiful thing (beautiful at least in the eyes of the maker); because they learn the joy of freedom in selecting subjects and mediums for artistic expression; and because they develop more discriminating taste and learn to accept constructive criticism gracefully.
2. *Junior Safety Council*—valuable because its members develop a new feeling of responsibility for the safety of themselves and of others; because the consideration of safety problems in the immediate community gives the members a keener civic consciousness; and because the Safety Color Guard, together with the safety pledge and songs, draws the members into a closer fellowship for worthy purposes.
3. *Sewing Club*—significant because its members learn to enjoy the quiet happiness of sitting in an attractive room and chatting with companions and a kindly teacher while employing their hands in useful work; and because the opportunity to select materials and colors, and to plan simple needlework, gives many shy children a joy they have not known before in all their school lives.
4. *Dramatic Club*—helpful because the exhilaration of having even a small part in a simple production puts many children's feet on the trail to new interests and increased efforts; and because initiative and creative ability are required in working out stage settings and costumes.
5. *Indoor Games Club*—valuable because the children learn to win or lose gracefully; because they learn new games to play at home instead of depending on the radio and movies for all their recreation; and because they develop concentration and knowledge thru playing such games as "Lindbergh," "Touring," Checkers," "Flinch," and so forth.
6. *School Chorus*—worthwhile because well-directed group singing brings its participants together in a common spirit of enjoyment; because the children have to concentrate in learning new music; and because they work together for the pleasure of others, and experience the feeling of success when a beautiful musical number receives the approval of listeners.

During the past few years several clubs have been tried for a semester and then abandoned because they were failing to contribute distinctively to pupil development. For example, the science club was discontinued because its sponsor, an excellent teacher of science, felt that the club was becoming merely an extra class period in this subject. The health club also passed out of existence for the same reason. The travel club was abandoned because its sponsor, a world traveler and an extremely interesting speaker, felt that she was conducting a lecture course rather than a school club.

Children's replies to a questionnaire—When asked for their opinions of the club work in this school, the pupils replied overwhelmingly in

favor of the program. Some of their reasons are quoted here:

1. Clubs give us children time to do things we really want to do.
2. They help groups learn to know each other better.
3. We learn to play fair.
4. Clubs help our school because they make the children happy.
5. It is fun to help little children to keep out of danger.
6. You always have something to do.
7. Clubs help you to learn what you most enjoy.
8. Clubs are something different from regular school work and are a pleasure.
9. The Games Club helps us to think for ourselves.
10. Clubs make it more fun to come to school and we are always thinking of ways to make our club better.
11. Clubs give our school a better atmosphere and better school spirit.
12. Clubs help the children to know the teachers better, and they help the teachers to know the pupils.
13. Clubs give us pleasures to look forward to.
14. I work with people in my own class and get to know children in other classes who like to do the things I like to do.

The principal's evaluation—As an administrator, the writer tries continuously to evaluate the club program with reference to four general criteria, as follows:

1. Do the clubs help prepare pupils to use leisure time worthily?
2. Are the clubs helping our boys and girls to form satisfactory standards of social relationships: (a) toward their contemporaries both of their own and of the opposite sex; (b) toward the "elders" of their environment—parents, teachers, and civic leaders; and (c) toward the handicapped of society?
3. Are the clubs helping our pupils to acquire ethical habits of conduct—playing fair, owning up, being honest in work, learning to respect the rights and property of others? Are the pupils learning to regulate conduct in terms of consequences to themselves and to others? Are the more thoughtful and mature learning to regulate their conduct in terms of accepted principles?
4. Are the clubs making the children more sensitive and responsive to the needs of others: to the need for friendly companionship on the part of new pupils; to the need for friendliness and toleration on the part of those who are "different" in dress, in speech, in nationality, and in temperament; to the need for helpfulness on the part of those who are strange or have fallen behind in their work?[1]

To all of these questions, we who have used clubs during the past five years feel that we can give affirmative answers. Moreover, our objectives for the clubs seem to have been fulfilled in a larger measure than we had expected. We believe that as an opportunity for pupil guidance and character building, the school club is the most valuable instrument we have found.

[1] Adapted from: National Education Association, Department of Superintendence. *Character Education.* Tenth Yearbook. Washington, D. C.: the Department, 1932. p. 240-42.

JUDGING THE ADEQUACY OF SCHOOL LIBRARIES IN RURAL AREAS

MABEL WILKINSON ETHERIDGE
Librarian, State Teachers College, Minot, North Dakota

THERE has been little attempt to evaluate elementary-school libraries in rural areas for at least two reasons: (1) teachers as well as parents and schoolboard members have not been well informed as to the proper functions of a library in the school; and (2) criteria and methods for judging such a library have not been satisfactorily developed. This article discusses briefly the status of certain school libraries in North Dakota, and suggests a modification of the criteria now available for determining their adequacy.

A training-school library—Most school libraries in rural areas have developed without reference to standards of any kind. A typical example is the library in the training school at the teachers college in Minot, North Dakota. This collection of books is the result of a few meager purchases, miscellaneous gifts from friends during book "drives," and material cast off by teachers who have left to accept positions elsewhere. Comparing this library with the standards set up by the state department of education,[1] we find the following:

1. Approximately 25 percent of the books are on the required list of the state department.
2. More than the minimum required number of 100 books per room are available.
3. There is good cooperation between the school library and the town library.
4. Considerably fewer than one-half of the books are suitable for use in the first four grades.
5. Little or nothing is being done with the pupils' voluntary reading course prescribed by the state department.

These findings do not reveal much about the adequacy of the school library. Let us consider it with reference to the five objectives stated in the tentative standards for elementary-school libraries of the American Library Association.[2]

Objective 1: To select a balanced collection of books to meet the demands of an integrated educational program as it is outlined by grade and subject in the curriculum. This is an excellent objective, but in a frontier community where money and books are scarce, one must take what one can get and make the most of it. It is impossible for us to attain the distribution of expenditures recommended as necessary to obtain a balanced collection of books, which is as follows:

[1] North Dakota Department of Education Bulletin No. 5, 7th rev. ed., 1933.
[2] American Library Association, School Libraries Committee. *School Library Yearbook Number Five.* Chicago: the Association, 1932. p. 3-9.

	Percent
Reading and literature	25
Social studies	25
Science	20
Other departments (arts, music, etc.)	10
Reference	10
General works	10
Total	100

The training-school library has no definite funds of any description; hence it is very short of books in science, social studies, and the arts, and overbalanced with books in certain other fields. The recommended book fund of approximately seventy-five cents per year for each pupil enrolled is not raised in this vicinity on account of the shortage of money.

Objective 2: To encourage an interest in reading and books. A large proportion of the available books are printed in such small type and in such unattractive form that the average child will not read them. Others are so old that their contents are misleading or positively inaccurate. The fact that many of these volumes were contributed to the library makes it hard to dispose of them without creating friction between the school and the community.

Objective 3: To stimulate exploratory reading for facts, and the effective use of library tools for research. Approximately one-half of the books in the training-school collection would contribute to this objective.

Objective 4: To establish the habit of using the public library freely. This is an easy matter as long as the public library has funds to supply interesting, attractive material for children.

Objective 5: To foster a fine feeling for books and a discriminating judgment in values. This has been accomplished to some extent among elementary-school pupils. It is usually the child with few if any books at home who cares nothing about them. Apparently the social and cultural backgrounds of the child and his parents are influential factors in attaining the fifth objective.

Lack of trained librarians—Desirable standards for librarians or teacher-librarians are difficult to attain because of the lack of trained workers. The tendency is to use unskilled PWA or NYA workers instead of competent, experienced librarians because the former can be obtained for less money. In the local teachers college, NYA students are keeping the training-school library open from 8 A. M. to 3 P. M. daily under the supervision of the college librarian. This arrangement is satisfactory so far as the performance of mechanical and clerical duties is concerned, but it is impossible to accomplish the most im-

portant educational purposes without a full-time, trained librarian in a school of this size.

Some guidance in reading, as well as training in the use of books and libraries, was given to the training-school pupils during the past year by members of the college class in library practise. With the help of games illustrating the classification and arrangement of books on the shelves, the card catalog, dictionaries, encyclopedias, and special references, each grade was given seven twenty-minute lessons on the practical application of the principles worked out by the librarian and teacher together. At the completion of the course, the children were able to locate library materials and references more rapidly and effectively than some of the supervisors and practise teachers.

Rural-school libraries in general—Apparently most rural-school libraries in North Dakota are no more adequate than the training-school library described above. From a questionnaire answered by elementary teachers attending the summer session of the teachers college, the following facts were obtained:

1. Few if any schoolboards have paid the least attention to the minimum requirements of the state school-library law during the past five years as to the amount to be spent for elementary-school libraries.
2. The collections, while meeting the minimum requirements as to the number of volumes, are made up largely of obsolete texts and other books which must be classed as "dead timber" so far as the function or recentness of their contents is concerned.
3. Many schools have no book collections other than textbooks. Their attitude seems to be that "a book is a book, and that's all there is to it!"
4. One county superintendent[8] is building a good collection of attractive new books among the schools of his county, where no other library service is available.
5. State lists are not up-to-date, and they lack information as to the timeliness of materials listed.
6. Many school buildings have been abandoned. Some of these contained fairly good collections of books, but as the law requires the books to be kept in the local district, only mice and rats are benefiting by them.
7. Books housed in active schools have been there so long that they have lost their appeal to the pupils; yet they might interest children in other schools if exchanges between districts were possible.
8. Supplementary service from the State Library Commission is slow and inadequate. Moreover, high transportation rates make the use of this service impossible in communities where it is most needed.
9. Where attractive new books are available for use in the first four grades, all pupils showed marked improvement in reading interest and reading ability.

Need for better criteria—In existing criteria for evaluating school libraries, the major emphasis seems to be placed on equipment, number of books, and amount of money to be spent, rather than on service rendered the school child, the requirements of the curriculum, or the needs of the library in its relation to the school. Apparently little at-

[8] Superintendent J. B. Voeller of Pierce County, Rugby, North Dakota.

tempt is being made to correlate the reading interests of children with the contents of the average rural-school library. It would seem that an evaluation of the elementary-school library should consider primarily the effectiveness of library service rather than its size and equipment—its quality rather than its quantity. Such evaluation should take into account the following:

1. The reading interests of children
2. The needs of the school with respect to curriculum requirements
3. The needs of the school library in its relation to the school and to the use to be made of it, including:
    a. The purpose for which the collection is intended
    b. The grades to be served
    c. The kind and type of materials needed, whether educational, inspirational, or recreational
    d. The authenticity and reliability of the collection
    e. Supplementary needs
    f. Timeliness or recentness of materials
    g. Interests of the pupil other than required reading
4. The place of the teacher-librarian in evaluating the library
    a. Thru reading-guidance programs
    b. Thru library supervision
        (1) As a check-up on the quality of pupil preparation and achievement
        (2) As a check-up on the quality of teaching and teacher preparation.

No one is in a more strategic position for checking on the quality of either pupil or teacher preparation than the librarian. She knows which pupils are doing the reading, and what they are reading. She also knows which teachers are keeping themselves informed about the newer educational practises, and which ones are merely hobbling along on the textbook crutch. Thru observation from the back of the library circulation desk, a principal also may learn a great deal about the reading habits of the teachers and pupils in his school.

Conclusion—It has been definitely shown that where plenty of interesting, attractive books are available in the school, the quality of teaching and of pupil achievement has noticeably improved thru appropriate guidance and practise in reading. Greater effectiveness of library service in all schools will be possible as soon as a sufficient number of "library-minded" superintendents, teachers, schoolboard members, and parents are available. The public as well as the educational profession must realize that the life of the modern school is dependent on its library, and that the librarian's function is to make available published materials which will meet children's needs and reflect the changing interests of modern life. Teachers must cooperate to the extent of keeping pace with our changing world, and of guiding the child to a realization of the unlimited possibilities open to him thru the intelligent use of library resources.

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CHAPTER VII

MEASURING THE PROGRESS OF PUPILS

EDITORIAL COMMENT

MEASUREMENT OF PUPIL PROGRESS is essential in evaluating a school program. Most authorities agree that objective measures of such progress are generally superior to estimates based on personal opinion alone. Altho many areas of pupil development have not yet been measured satisfactorily, considerable progress is being made. It is no longer necessary to rely entirely upon either uncontrolled observation or poorly constructed objective tests in determining important educational outcomes. Resourceful principals and teachers will help to develop new and better measures. At the same time they will use the best means now available for estimating the growth of children.

Validity is undoubtedly the most important characteristic of a good test. Unless a test really measures what it is supposed to measure, no meaningful conclusions can be drawn from its results. Tests used to appraise a school program should include only those abilities, knowledges, and attitudes which are recognized as objectives of that program. Standardized tests should be scrutinized carefully to determine their validity in the local school situation. Whenever such validity is lacking, school officers and teachers will need to construct their own tests.

This chapter should help administrators and teachers in selecting, using, and interpreting measures of pupil development. Lee reviews essential elements of an adequate testing program. Cook indicates some uses and limitations of tests, outlines a specific testing program, and lists criteria for the selection of tests. Lindquist discusses the major purpose and characteristics of standardized achievement tests, and shows why such tests cannot properly be used as guides to curriculum content in any single grade. Brownell proposes five criteria for appraising tests with reference to their effect on learning and teaching. Wrightstone suggests several approaches to the measurement of newer educational objectives.

The last three articles deal with instruments for measuring aspects of child personality. Alschuler and Hattwick describe two behavior rating scales, one for nursery and kindergarten children, and the other for children in Grades I to VI. Ralph tells how progress in pupil adjustment was measured in his school. Ginsburg describes the development and use of a checklist of good manners.

The list of references on page 522 provides a basis for further reading on methods of measuring pupil progress.—*Editorial Committee.*

ESSENTIAL ELEMENTS OF AN ADEQUATE TESTING PROGRAM

J. MURRAY LEE

Assistant Professor of Education, University of Wisconsin, Madison, Wisconsin

MEASUREMENT is a tool for the improvement of instruction. Many of the educational crimes which have been committed in the past twenty years have been due to a wrong concept of the purpose of measurement. As a result, several years ago many of the so-called progressive schools raised a hue and cry against tests; they wished to eliminate such instruments from the educational program. Today it is interesting to find the most progressive schools among those which are doing the most to develop new instruments of measurement.[1] Now, more than ever before, teachers and principals are making effective use of tests in improving the learning of children.

Much criticism has been directed against standardized tests for not measuring the outcomes in which the modern elementary school is interested. Certainly that criticism is well directed against many of the standardized tests available today, but not against all of them. Standardized tests which measure merely a knowledge of facts in literature, history, or geography were constructed for an elementary school whose central purpose was the mastery of a given body of subjectmatter. There is no more reason for using such tests today than there is for using books which were written for that type of school.

The modern elementary school is interested in knowing to what extent the child has mastered the basic tools of learning, such as reading, arithmetic processes, and the use of language. It also wishes to know how well children understand and can use important facts and concepts in elementary science and the social studies. Tests which measure such abilities are of great value to the elementary teacher. Several batteries of tests have been constructed for measuring one or both of these areas of learning,[2] and a number of publishers handle separate tests which are of value. Thus, as instructional methods have changed, a corresponding change has occurred in the types of tests being developed. The best tests today measure much more than the mere ability to recall specific items of subjectmatter.

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[1] See: Tyler, Ralph W. "Defining and Measuring Objectives of Progressive Education." *Educational Record Supplement No. 9* (January 1936). p. 78-85.

[2] Such as the *Modern School Achievement Tests*, published by the Bureau of Publications, Teachers College, Columbia University, New York; the *Unit Scales of Attainment*, published by the Educational Test Bureau, Minneapolis; and the *Progressive Achievement Tests*, published by the Southern California School Book Depository, Los Angeles. The last named test is limited to abilities in reading, arithmetic, and language.

PLANNING THE TESTING PROGRAM

The first step in planning a testing program is to decide the uses which are to be made of tests. The principal should consider especially the uses which the teachers will make of the tests. A testing program is worse than useless if the teachers do not use the results. After desirable uses have been determined, the tests which will satisfy these needs can be selected.

The second important consideration is to be certain that the testing procedure followed insures the use of results for the improvement of instruction. Too often a testing program does more damage than good. The writer has had the opportunity to observe the effects of two types of testing programs. In one case tests of facts and skills were given at the end of the year by a state department of education. In the other case tests of skills were given at the beginning of the year and were selected by the local school authorities. The first procedure resulted in cramming by the pupils and in much cheating on the part of teachers. In the system that gave tests at the beginning of the year, the teachers were vitally interested in analyzing the needs of each pupil. There was no feeling that the teacher was being judged; the attention of everyone was focused upon the needs of the child.

The third essential is to be sure that the teachers understand the implications of the test results and do the necessary follow-up work. Many of the school research departments in large cities are doing an excellent job in this regard.[3] Most of the responsibility, however, must be carried by the principal of the individual school. There are a number of devices for facilitating follow-up work, such as forms for reporting the results of such work to the principal, the listing of pupils who are very poor in achievement, individual conferences with teachers, reports on remedial procedures used, and retesting to determine growth. Some devices are effective with some teachers, and some with others. The principal should vary his procedure somewhat from year to year.

As just indicated, the effectiveness of any testing program rests largely with the school principal. He must make sure (1) that the uses of tests are carefully planned; (2) that the tests selected will furnish information which the teacher can use to improve the learning of children; (3) that the tests are given at the proper time; and (4) that an adequate program of follow-up work is carried on.

TYPES OF TESTS AND THEIR USES IN THE CLASSROOM

While tests are not general cure-alls, they can be put to several profitable uses in the classroom. The following paragraphs review some

[3] For a description of such work, see: Lee, J. Murray. *A Guide to Measurement in Secondary Schools.* New York: D. Appleton-Century Co., 1936. Chapter XII.

of the ways in which teachers can make use of test results. These uses are classified under three main types of tests, as follows: (1) tests of capacity or intelligence, (2) standardized tests of educational achievement, and (3) teacher-made tests of achievement.

Tests of capacity or intelligence—Boys and girls are complex human beings. The more we know about them as individuals the better we are able to plan an educational program suited to their individual needs. Tests of capacity or intelligence furnish one very important measure of these needs. We now recognize that these tests do not tell the whole story of a child's potentialities, but if his problems are to be understood such a measure cannot be omitted.

The past few years has seen a great improvement in such tests. There are now available reading-readiness tests to predict success in first-grade reading, special aptitude tests to predict success in art, music, algebra, geometry, and a number of other fields. Recently there has appeared a new test, the *California Test of Mental Maturity*,[4] which furnishes in addition to the usual I.Q., a separate I.Q. based on language abilities and another on non-language abilities. There are also pretests which distinguish the child whose eyesight, hearing, or muscular coordination is so poor as to affect the results of ordinary tests. These newer types of tests enable us to know much more about a child's capacities than did the traditional intelligence test.

A teacher can use such measures to:

1. Provide a diagnostic evaluation of the mental abilities of each child
2. Interpret learning difficulties in the light of pupil abilities
3. Identify outstanding pupils of either high or low ability who need special educational procedures
4. Analyze individual problem cases, such as failing pupils, disciplinary problems, and personality difficulties
5. Understand the general mental level of the class as a guide in the selection of instructional materials and experiences.

Standardized tests of educational achievement—Requirements of modern unit-of-work programs demand that teacher-made tests and standardized tests supplement each other. Neither type is complete in and of itself. Moreover, their differences in purpose should be clearly understood by teachers. The standardized achievement test can furnish a much more comprehensive measure of abilities and skills than can teacher-constructed tests. On the other hand, to measure the specific understandings which were the aim of a given unit of study, and the definite informational materials which were taught in that unit, is clearly the function of teacher-made tests. It is to this aspect of measurement that the teacher should devote her time and effort in test construction.

[4] Published by the Southern California School Book Depository, Los Angeles.

Most standardized tests which the teacher is likely to use yield a diagnostic profile which provides an analysis of the abilities of each individual pupil. They also have comparable norms for the various abilities. All this information makes it possible for the teacher to utilize the results in the improvement of her instructional program. She can use standardized achievement tests to:

1. Discover the difficulties and shortages of each child in the skills which are essential for success in pupil activities
2. Obtain a measure of each child's skills in such fields as reading vocabulary, reading comprehension, arithmetic, and language
3. Provide a basis for planning an individual remedial program to meet the needs of the pupil
4. Provide a basis for grouping pupils according to their needs for remedial instruction. This refers to the formation of groups in reading or other specific fields, and not to the practise of grouping classes homogeneously for the entire instructional program.
5. Show the pupils in which skills they are in need of special work
6. Discover which pupils are not doing work which compares favorably with that done by pupils of the same ability in other schools. The use of a mental maturity test together with the achievement test will furnish the basis for this information.
7. Evaluate strengths and weaknesses of instruction in the various skills
8. Provide a basis for studying the adjustment problems of the child. Many of the behavior problems of pupils are due to educational maladjustments.

Teacher-made tests of achievement—One difficulty in the unit-of-work program in many schools is that the teachers have hoped for certain outcomes but have not known what outcomes were attained. Too often there has been no effort to check on the actual results. The need for checking does not mean that the teacher should make the pupils feel that their passing or failing depends on the results of tests. It does mean, however, that the teacher should use tests to determine whether the class and its individual members do or do not have certain understandings. All fear of the testing situation can be eliminated if the pupil is not made to feel that his whole future depends upon his success on a particular test.

Situations which show whether understandings have been attained should be the basis of most test questions. A mastery of facts does not mean that the pupil will understand the implication of those facts. We have made the mistake in the past of measuring only knowledge of the facts rather than the children's understanding of them. An excellent illustration of this point is the usual test on graphs. Such a test covers the facts of the graph, but not the implications of the data represented. The test item must be placed in a functional setting to be effective. The change from the traditional test to the functional test is largely a matter of emphasis and of imagination in providing test situations.

Teachers should construct many of their own tests and use the results:

1. In determining to what extent the understandings of a given unit of work have been attained
2. In determining what changes in attitudes, beliefs, and appreciations have taken place
3. To show pupils where they need to place more emphasis in their work
4. To evaluate strengths and weaknesses of instruction
5. To guide in the future selection of work units and types of activities
6. To discover weaknesses in skills for which standardized tests are not available.

The construction of test situations which are functional will challenge the cleverest teacher. A study of some of the newer published tests should be helpful. Also, there has been gradually built up a considerable body of material on various types of test questions,[5] and these suggestions and illustrations should be valuable to teachers on all levels.

A FINAL WORD

No elementary school today can have an efficient instructional program without knowing what it is accomplishing. Tests are a means of finding out what is happening to pupils in order that further progress may be made. The emphasis on the individual requires not only a general knowledge of what is happening to the group, but also specific knowledge for each individual. As devices for obtaining such information, tests of capacity or intelligence, standardized tests of skills and abilities, and teacher-made tests of understandings and knowledges are of primary importance in the evaluation program of the school.

[5] Lee, J. Murray, *op. cit.*, Chapters X and XI.

THE ELIMINATION of examinations is not the panacea for modern educational ailments. With present educational systems, examinations are both necessary and desirable. It is not the examination that is objectionable so much as is the way in which it is sometimes misused. Properly understood as educative and not as punitive or inquisitorial instruments, examinations have a legitimate function in the school.—Rivlin, Harry N., *Educating for Adjustment,* D. Appleton-Century Co., 1936, p. 361. (Quoted by permission of the publishers.)

THE USE OF TESTS IN A SUPERVISORY PROGRAM

WALTER W. COOK

Professor of Education and Director of Teacher Training, Eastern Illinois State Teachers College, Charleston, Illinois

IT is impossible to appraise testing as a supervisory device. It is only possible to appraise specific tests used in specific situations for specific purposes. Much effort has been dissipated in praising or condemning essay-type tests, objective tests, standardized tests, regional testing programs, and other gross features of the educational measurement movement without consideration for the essential elements of a valid appraisal. These elements include the purpose which the test is designed to serve, the educational status of the pupil being tested, the use made of the test results, and the extent to which the test accomplishes its purpose.[1] In this article an attempt is made to set forth some of the uses and limitations of tests in school supervision, and to describe briefly the testing program of the Laboratory Schools of Eastern Illinois State Teachers College.

INFLUENCES OF TESTING IN THE SCHOOL

Tests are both powerful and dangerous instruments. It is important that supervisors and teachers recognize this fact. Every testing program has far-reaching effects on the curriculum, on the objectives and methods of instruction, and on the study habits of the pupils. These effects may be either beneficial or detrimental, depending upon the specific nature of the tests and the uses made of the results.

Effects on curriculum emphasis—An effective supervisory testing program must be continuous and systematic, and the findings should be cumulatively and graphically portrayed. When these conditions are met, the skills, abilities, attitudes, knowledges, understandings, or other characteristics measured by the tests become the objectives of the school. These objectives tend to determine the curriculum emphasis, the teaching procedures, and the methods of study. Thus, a testing program may, to a large degree, determine the curriculum of the school. It may promote desirable changes, prevent desirable changes, or warp the teaching emphasis in such a way as to nullify the advantages of a really superior curriculum. Since systematic testing tends to focus instructional effort upon the characteristics measured by the tests, it is highly important that these include all the desired outcomes of instruction.

The importance of testing all the objectives of a school subject may

[1] An excellent background for the appraisal of tests for various purposes may be secured by reading: Hawkes, H. E., and others. *The Construction and Use of Achievement Examinations.* Boston: Houghton Mifflin Co., 1936. Chapters I, II, and III.

be illustrated by considering the reading program. It is not uncommon for achievement tests in reading to measure only vocabulary knowledge and paragraph comprehension. Emphasis upon these limited objectives over a period of time encourages the neglect of such important goals in reading as the ability to use basic reference material, to use an index, a table of contents, and a dictionary, to use library card files, to comprehend maps, to read graphs and tables, to organize what is read, to summarize materials, to place topics in their proper order, to outline what is read, to pronounce words correctly, to make the voice pleasing in oral reading, to assume proper posture in oral reading, to care for books, to select interesting reading material, and many other objectives which are included in a modern course of study in reading. Many of these abilities are now being measured by the more comprehensive and carefully constructed achievement tests, such as the *Iowa Every-Pupil Tests of Basic Skills*.[2] There is reason to believe that these tests are exerting a wholesome influence upon the curriculums of the schools in which they are used.

Effects on methods of teaching and learning—Perhaps even more important than the influence of the testing program upon the curriculum, is its influence upon teaching procedures and study habits. In a great many American schools, teaching still consists of making assignments in textbooks and of hearing recitations which require the pupils to reproduce from memory the materials of the text. In such schools study consists largely of memorizing textbook content. Mechanical, rote-memory procedure dominates the classroom, and the development of the higher mental processes is neglected. Most teacher-made tests of both the essay and objective types reflect this conception of teaching; they consist largely of the *name, identify, define, describe, who, what, when,* and *where* types of questions. Altho it must be admitted that many of the earlier standardized tests and the examinations furnished by certain state examining boards have tended to encourage and perpetuate this type of teaching and learning, our most competent test builders are striving with a large degree of success to construct tests which will discourage this memoriter type of teaching. The best of the newer tests avoid the use of stereotyped textbook language, require the application of laws and principles in new situations, emphasize understanding and the relationships of ideas rather than mere verbal learning, and stress the functional value of what has been learned, rather than the subjectmatter itself. Such tests are freed from the specific content of textbooks or courses of study, and measure rather the intellectual development which should be achieved thru that content.

[2] Published by the Bureau of Educational Research and Service, State University of Iowa, Iowa City, Iowa.

Tests of this kind are difficult to build; few classroom teachers have the necessary time, technical knowledge of test construction, or insight into educational objectives to do it. The fact that such tests, when built, can be successfully used in schools thruout the nation is reason for optimism. In many colleges and schools of education we now find the curriculum experts in various fields cooperating with the test experts in building such tests, and in furnishing yearly testing programs to the public schools which they serve. This service probably has had more influence in modernizing the curriculums in the areas served, and in clarifying educational objectives for the teachers, than has any other agency. It is an extremely important and difficult service to render.[3]

USES MADE OF TESTS IN A LABORATORY SCHOOL

Space will not permit a critical evaluation of all the uses made of tests in the Laboratory Schools of Eastern Illinois State Teachers College. Instead, a classification of such uses is presented. Tests are used in the supervisory program of these schools in the following ways:

1. To redirect curriculum emphasis, thru
   a. Measurement of the extent to which educational objectives are being realized
   b. Measurement of as many desirable educational outcomes as possible
   c. Clarification of educational objectives
   d. Diagnosis of weaknesses in the instructional program
   e. Discovery of inadequacies in the curriculum content.
2. To provide a basis for educational guidance of pupils, by
   a. Predicting pupil performance
   b. Classifying pupils
   c. Diagnosing learning difficulties
   d. Setting up standards of pupil performance
   e. Discovering special aptitudes
   f. Discovering pupils in need of guidance and individual attention
   g. Measuring pupil achievement.
3. To encourage pupils to put forth their best efforts, by
   a. Enabling pupils to think of their achievements in objective terms
   b. Giving pupils credit for the progress they make, rather than for the level of achievement they attain
   c. Enabling bright pupils to compete with superior pupils in other schools over a wide area
   d. Promoting competition between groups
   e. Enabling pupils to compete with their own past records
   f. Measuring achievement objectively in terms of accepted educational standards, rather than by the subjective appraisal of teachers.
4. To direct and motivate supervisory effort, by
   a. Discovering teachers in need of supervisory aid
   b. Giving the supervisor a measure of the effectiveness of his school organization, and of his supervisory and administrative policies.

[3] For a statement of newer educational objectives, together with suggestions for measuring their attainment, see the article by Wrightstone in this chapter.—*Editorial Committee.*

5. To provide a basis for the marking and promotion of pupils
   a. The report card used in the laboratory schools devotes four times as much space to personality and physical traits as to educational achievement. The marks in educational achievement are based on progress made during the marking period, and not on the level of achievement attained.
   b. Promotions are made on the basis of physical and social development. Adjustments are made in the primary grades. Above the primary grades regular promotion is universal. The average range of ability within each grade is approximately five years. This is no greater than in other schools where retardation is a common practise.
6. To build and maintain desirable skills, abilities, and understandings. Test periods are considered as very effective learning periods as well as testing periods.

THE TESTING PROGRAM OF THE LABORATORY SCHOOLS

Intelligence tests—Intelligence tests are not an integral part of the testing program in the laboratory schools, because no purpose has been found for them that is not better served by tests of achievement or of specific aptitudes. For purposes of classification, guidance, and teaching, special capacities are assumed to exist, such as facility with language, capacity to do abstract thinking in mathematics, capacity for computation in mathematics, capacity for developing motor skills, capacity for musical development, capacity for making social adjustments, capacity for relational thinking in the sciences, and capacity to memorize. Altho all these special capacities are positively correlated, the correlations are not sufficiently high to enable one to use a single measure of intelligence as a basis for classification and guidance in all fields of work. In an intelligence test certain special capacities are measured indirectly thru a series of achievement tests, the resulting scores are combined in a purely arbitrary manner, and the result is assumed to be a measure of general intelligence. In the writer's judgment, a more valuable procedure for educational purposes would be to establish independent norms for each of the special capacities.

In the laboratory schools the pupils are grouped into grades on the basis of their physical and social ages. They are classified within each grade on the basis of their achievement in each subject field. In reading and in the content subjects the classification is based on reading comprehension. In arithmetic the classification is based on achievement in arithmetic. Shifts are made from group to group whenever the need arises.

Reading tests—The laboratory schools do not include a kindergarten. A pupil enters the first grade when his sixth birthday falls within six months of the opening of school. Within the first few weeks of school the *Betts Ready to Read Tests* [4] and the *Metropolitan Readiness Tests* [5]

[4] Betts, Emmett A. *Betts Ready to Read Tests.* (Individual Tests) Meadville, Pa.: Keystone View Co.

[5] Hildreth, Gertrude, and Griffiths, Nellie L. *Metropolitan Readiness Tests.* (Group Tests) Yonkers-on-Hudson, N. Y.: World Book Co.

are administered. If the tests and observation reveal that a child is not sufficiently mature physically and mentally to do first-grade work, the parents are asked to keep the child out of school for another year. Approximately 6 percent of the six-year-olds are rejected. In a few cases visual defects and auditory defects that were not discovered in the general physical examination are revealed by the Betts tests. The development of reading readiness, with the exception of physical and mental maturity, is assumed as a responsibility by the first-grade teacher.

At the end of the first semester of the first grade, at the close of the first grade, and at the close of the first semester of the second grade, the *Gates Primary Reading Tests* [6] are administered. At the close of the second year the reading section of the *New Stanford Achievement Test* [7] is administered, and at the beginning of the third grade the *Thorndike-McCall Reading Scale* [8] is used. In Grades II thru VIII the complete battery of the Stanford test is administered every May, and the Thorndike-McCall test is used every twelve weeks. In Grades III thru VII the *Standard Test Lessons in Reading* [9] are administered from two to three times each week. The *Iowa Every-Pupil Tests of Basic Skills* [10] are administered to the sixth, seventh, and eighth grades each January.

With the exception of the *Standard Test Lessons in Reading,* the results of every test from the first grade thru the eighth are recorded on both an individual pupil graph and a grade graph which portray reading progress thruout the elementary school. The teachers and pupils look forward to each test and are eager to know the results.

The eighth-grade class of the laboratory schools contained thirty-eight pupils in 1936. The average chronological age of these pupils in May was thirteen years and eleven months. Their average reading age was sixteen years and five months (*New Stanford Achievement Test*), and the percentile rank of the class in the reading section of the *Iowa Every-Pupil Tests of Basic Skills* was 99.

Arithmetic tests—The essential feature of the testing program in arithmetic is the "Self-Testing Drills" of the *Study Arithmetics,* [11]

[6] Gates, Arthur I. *Gates Primary Reading Tests.* New York: Bureau of Publications, Teachers College, Columbia University.

[7] Kelley, T. L.; Ruch, G. M.; and Terman, L. M. *New Stanford Achievement Test.* Yonkers-on-Hudson, N. Y.: World Book Co.

[8] Thorndike, E. L., and McCall, W. A. *Thorndike-McCall Reading Scale.* New York: Bureau of Publications, Teachers College, Columbia University.

[9] McCall, W. A., and Crabbs, L. M. *Standard Test Lessons in Reading.* New York: Bureau of Publications, Teachers College, Columbia University. Books II, III, IV, and V.

[10] Lindquist, E. F., and others. *Iowa Every-Pupil Tests of Basic Skills.* Iowa City, Iowa: Bureau of Educational Research and Service, State University of Iowa.

[11] Knight, F. B.; Studebaker, J. W.; and Ruch, G. M. *Study Arithmetics.* Chicago: Scott, Foresman and Co., 1934-36.

which are administered once each week. These tests are designed both to maintain skills and to furnish a constant diagnostic record of achievement. Every skill built up in arithmetic is reviewed systematically by means of mixed drills. A record of errors is kept for diagnostic purposes. All the drills are standardized, and the pupils are thus enabled to compete with children in other schools as well as with their own past records. There is also competition among grades for the highest rank each week. Individual and class graphs are made to show progress.

In May 1936, the eighth-grade class of thirty-eight pupils, with an average chronological age of thirteen years and eleven months, had an average arithmetic age of seventeen years as measured by the *New Stanford Achievement Test.* The percentile rank of the class in the arithmetic division of the *Iowa Every-Pupil Tests of Basic Skills* was 94.

Spelling tests—In the primary grades the study-test method is used in spelling. In Grades IV thru VIII the test-study method is used. The latter method is essentially the Monday-Wednesday-Friday test procedure recommended by Horn and Ashbaugh,[12] with some variation in study procedure.

The method of checking achievement may be illustrated by using the fifth grade as an example. There are approximately 600 words in the fifth-grade spelling list. Two hundred of these words are selected for testing purposes. One hundred words are pronounced to the pupils some time during the first two weeks of school. The scores on this test represent the percent of words in the fifth-grade list that each pupil can spell without study. The average score for the class represents the percent that the class can spell. All pupils scoring 90 or higher are excused from spelling for the year. The other 100-word test is administered about two weeks before school closes. If the words are properly selected and graded and the class is of average ability, the average class score on the first test will be approximately 50. If the teaching is effective, the average score on the final test will be above 90.

A graph is made each year and passed on to the new teacher receiving the class. The names of the pupils are arranged in a list, from the pupil with the lowest spelling ability to the pupil with the highest spelling ability. Two bars are drawn opposite each pupil's name showing his percent of correct spelling at the beginning and at the close of the term. The percent gained is written opposite each pupil's name, and the average percent gained by the class is shown at the bottom of the sheet. There is no question about the validity of these tests, and they effectively motivate both pupils and teachers.

[12] Horn, Ernest, and Ashbaugh, E. J. *Progress in Spelling; Grades I to VIII.* Philadelphia: J. B. Lippincott Co., 1935. 200 p.

Handwriting tests—The writing of all pupils above the second grade is rated for speed and quality twice each year by means of the *American Scale of Handwriting*.[13] The results of each rating are recorded graphically and are posted where the pupils may examine them. In making the graph, a sheet of white paper 12″ x 18″ is used. A suitable heading is placed at the top. The pupils' names are typed in a column down the center of the paper, one-half inch apart. On the right side of the names a scale for *speed* is constructed, indicating the number of letters per minute with the norm for the grade shown in red. On the left side of the names a scale for *quality* is constructed, with the norm for the grade represented by a red line. As each pupil is rated, a colored line is drawn on each side of his name to show the speed and quality he has attained. There is room on each chart for at least six lines. Thus, a chart may be used for three years by indicating a new norm for each year.

The Freeman *Chart for Diagnosing Faults in Handwriting* [14] is used for diagnostic purposes. This chart is posted on the bulletin-board of each room, and the pupils are taught to diagnose their own deficiencies in handwriting. It is surprising how conscious each pupil becomes of his specific deficiencies and how effectively he works to overcome them.

Content-subject tests—The testing program of the laboratory schools is weak in geography, history, hygiene, and literature. The *New Stanford Achievement Test* is given once a year, but altho the pupils' scores on these tests are well above the norms, their validity is not accepted. The validity of the *Iowa Every-Pupil Tests of Basic Skills* is accepted, and the development of the ability to comprehend maps, to read charts and graphs, to use an index, to use basic references, and to use a dictionary, is striven for in teaching the content subjects.

CRITERIA FOR SELECTING ADEQUATE MEASURING INSTRUMENTS

In planning a testing program, it must be recognized that many of the most important educational objectives cannot now be measured by paper-and-pencil tests. The ability of a pupil to stand with both knees straight and express himself at some length in correct and forceful English is such an objective. Honesty, respect for the rights of others, the ability to take responsibility, and other character traits belong in this category. Their development requires long and persistent effort by teachers. Any program for evaluating instruction or achievement must recognize such objectives. Many of them, perhaps, can be

[13] West, Paul V. *American Scale of Handwriting*. Boston: A. N. Palmer Co.
[14] Freeman, Frank N. *Chart for Diagnosing Faults in Handwriting*. Boston: Houghton Mifflin Co.

measured only thru the recitation, the oral examination, attitude scales, or controlled observation.[15]

The failure of school administrators to recognize such objectives and to give teachers due credit for their achievement, combined with an ill-advised emphasis on the results of poorly selected and inadequate standardized tests, has caused such a reaction against tests in some cities that their proper use is almost impossible. Moreover, the effective use of a testing program in a school system with inadequately prepared and politically entrenched teachers is difficult for even the most capable and tactful of supervisors. Testing programs are like dynamite: they are effective but must be used with caution and by individuals who know how.

The following criteria for the selection of tests are presented in the hope that they will aid in making the testing program not only more effective, but also more acceptable to the teaching staff.

1. The tests selected should measure valid educational objectives which the teaching staff is attempting to achieve or should attempt to achieve. Most of the standardized achievement test batteries contain tests which are not valid in a particular situation. For example, the spelling test frequently contains a high percent of words which are not and should not be in the elementary spelling lists. The history, geography, hygiene, and literature tests are frequently of the purely factual type, with no items designed to measure the functional value of the information; and the factual material included in the tests is frequently foreign to the curriculum of the school.

2. As many as possible of the skills, abilities, habits, attitudes, knowledges, and understandings which are accepted by the school as valid objectives should be measured. These outcomes should be measured by test items which require their functional application in new situations.

3. The tests should be well organized and sufficiently detailed to make diagnosis specific and adequate as a basis for remedial instruction.

4. Unless speed is an important factor, liberal time limits should be prescribed for administering the tests in order to permit every pupil to work to the limit of his ability. Whenever possible, the optimum administration time for the tests should have been experimentally determined by their authors.[16]

5. The test items should have been revised in the light of comments from teachers and supervisors, and except in the case of purely diagnostic tests, all items should have been evaluated with respect to their power to discriminate between different levels of achievement.[17]

6. The test norms should be up-to-date and based on the performances of pupils in similar schools and in similar environments. One set of norms for all types and sizes of schools is of little value.

7. A new form of the test battery should be provided yearly. The norms of as many of the tests as possible should be directly comparable for a given year and from year to year.

8. Individual and school profile charts should be available on a good grade of bond paper.

[15] For a description of a measurement program using observational methods, see the article by Pistor in Chapter V.—*Editorial Committee.*

[16] Cook, Walter W. *The Measurement of General Spelling Ability Involving Controlled Comparisons Between Techniques.* University of Iowa Studies in Education, Vol. VI, No. 6. Iowa City, Iowa: the University, 1932. p. 60-78.

[17] Lindquist, E. F., and Cook, Walter W. "Experimental Procedures in Test Evaluation." *Journal of Experimental Education* 1: 163-85; March 1933.

CONCLUSION

When tests are properly selected and administered, and when the results are graphically portrayed for the use of the teaching staff, they render the same service to a supervisor that the various instruments on the instrument panel of an airplane render to the pilot. Supervision without adequate instruments of measurement is no more effective, and equally as dangerous, as is blind flying without instruments for determining altitude, speed, direction, and so forth. The directing of an instructional program, however, is infinitely more complicated than piloting an airplane, and the instruments for showing the rate, depth, and type of learning are more numerous and complex. Hence it is desirable that both supervisors and teachers be well informed concerning the characteristics, uses, and limitations of educational achievement tests.

The leaders of the testing movement have reason to be proud of their accomplishments during the past ten years. When their work is criticized, they are entitled to receive detailed criticism of individual items in specific tests. Their thinking will not be helped by the continued repetition of general criticisms of the testing movement. When the desired outcomes of education are more clearly defined, better tests will undoubtedly be constructed to measure them, and when better tests are built, better teaching will follow. For the present, it is important to realize that while many important outcomes of education cannot be measured by means of available tests, sufficient progress has been made to warrant the continued use of the best tests as a part of every supervisory program.

OBJECTIVE TESTS are not worthless as measuring instruments, but they are not as satisfactory as many people believe them to be. If we do not soon attain a more intelligent attitude toward them, it is inevitable that eventually there will develop an uncritical and extreme distrust of them. Meanwhile, serious mistakes will be made because persons using objective tests do not understand them.—Monroe, Walter S., in *School and Society,* January 12, 1935, p. 52.

STANDARDIZED ACHIEVEMENT TESTS AND THEIR RELATION TO CURRICULUM CONTENT

E. F. LINDQUIST

Associate Professor of Education, State University of Iowa, Iowa City, Iowa

COMPREHENSIVE STANDARDIZED TEST BATTERIES for the measurement of elementary-school achievement—of the type currently represented by the *Progressive Achievement Tests*,[1] the *New Stanford Achievement Test*,[2] the *Unit Scales of Attainment*,[3] the *Metropolitan Achievement Tests*,[4] and the *Iowa Every-Pupil Tests of Basic Skills* [5]—have during the last ten or more years been either systematically or occasionally employed in nearly every progressive school system in the country. In spite of this fact, test users in general have not yet learned to recognize and appreciate fully the true nature and function of such test materials, and many serious misconceptions concerning them are still widely prevalent. As a result of these misconceptions, numerous efforts have been made and are being made to put such tests to uses for which they are neither intended nor adapted.

Among the most serious misconceptions about test usage are those concerned with the relationship between the content of a standardized test and the content of the curriculum. As a result of their experience with the traditional examination, many teachers feel that a pupil's performance on a test should not be considered satisfactory unless he is able to respond correctly to 70 or 75 percent of the test items. Again, teachers often look upon each individual item in a standardized test as measuring something which all or at least a large majority of their pupils should know or be able to do. Consequently, teachers have tended to consider a standardized test as an abbreviated course of study or as a convenient guide to the distribution of teaching emphasis, and have tended to point their instruction toward the specific content of the tests which they know will later be administered to their pupils.

The purposes of this discussion are (1) to explain what is the major function of standardized tests of the type previously mentioned, (2) to show what must be the characteristics of these tests if they are to perform this function most effectively, and (3) to show why, in light of these characteristics, a test may not be employed as a guide to proper curriculum content at any single grade level. For the sake of simplicity,

[1] Published by the Southern California School Book Depository, Hollywood, California.
[2] Published by the World Book Co., Yonkers-on-Hudson, New York.
[3] Published by the Educational Test Bureau, Minneapolis, Minnesota.
[4] Published by the World Book Co., Yonkers-on-Hudson, New York.
[5] Published by the Bureau of Educational Research and Service, State University of Iowa, Iowa City, Iowa.

we shall be concerned here only with a comprehensive achievement test intended for use in Grades VI, VII, and VIII, and designed to yield measures of the basic skills or abilities in reading, language, arithmetic, and study technics. The conclusions drawn will, however, apply equally well to tests designed to include other areas of instruction or for use with any other combination of grades.

Nature of the skills and abilities measured—To understand clearly what these tests are intended to do, it is essential to consider certain truths concerning the skills and abilities which they purport to measure. We may note, first, that while a test may be designed only for use in the sixth, seventh, and eighth grades, each of the basic skills which it measures is developed gradually and continuously thruout most of the elementary-school period, and that the development of these skills proceeds both in and out of school. This development, furthermore, is the common responsibility of teachers in all grades and in all departments of instruction. Language habits are being formed in the arithmetic as well as in the language classroom, and arithmetic is not the only subject in which the pupil practises quantitative thinking. What a single teacher may accomplish in a single classroom in one semester or year may influence the pupil's status relatively little in comparison with the cumulative influence of instruction in other subjects and in previous years, or of incidental learning.

It should be noted, secondly, that each basic skill is capable of development to a very high level. Each can be developed beyond the level tested by even the most difficult item in any test of this character, and certainly all skills can be and are developed in some pupils to a level far beyond that reached by the typical eighth-grader. The development of silent reading, for example, begins in the first grade or earlier and is continued beyond the high-school level.

Individual differences among pupils—It is very difficult to say, for any one grade, exactly what stage of development *should* have been reached by the typical or average pupil in that grade. On the other hand, it is well known that pupils in the same grade, even within the same school, show very large individual differences in the levels of achievement which they have reached. Some pupils, while still in the sixth grade, are able to read better, or can use better English, or can spell better, than the typical high-school freshman or sophomore. Other pupils, even tho in the eighth grade, are below the level of the average fifth-grader in many skills. Standardized test results have shown repeatedly that the range in achievement among the pupils in a single grade may often be eight to twelve times as great as the difference in average achievement from one grade level to the next; that is, the

difference between the highest and lowest scores made on a test in the seventh grade may be over ten times as great as the difference between the sixth- and seventh- or the seventh- and eighth-grade norms for that test.

These facts concerning individual differences are generally recognized in theory, and should be given careful consideration in teaching practise. If John Smith, a sixth-grader, can now read as well as, or better than, the average ninth-grader, his teacher should know that fact and should consider it in adapting her instruction, and particularly her individualized assignments, to his ability. If Charles Stone, in the seventh grade, is not capable of interpreting the simplest statistical graph, or can use the dictionary no better than the average fourth-grader, his teacher should know about these deficiencies and provide instruction to correct them. If Frank Jones, in the eighth grade, shows an unusual aptitude for arithmetic and is capable of a level of work far beyond that which may reasonably be expected of the typical eighth-grade pupil, that fact also should be known and considered in instruction, as should similar facts for pupils who are seriously retarded in their development of the same skill. Instruction cannot be effectively individualized, or adequate educational guidance be provided, until such information about each pupil is available in dependable form.

Major purpose of a general achievement test—In the light of what has just been said, the major purpose of a comprehensive standardized test is to describe reliably and in comparable terms how far each pupil *has* progressed (not how far he *should* have progressed) in his development of each of the skills tested. In other words, its purpose is to enable the teacher to construct an educational "profile" for the pupil that will indicate his true relative status in each of the areas measured. If it serves this purpose, the test will also show how far groups or classes of pupils have progressed, but it will not indicate how far any class or grade should have progressed or what specific skills the pupils should have mastered at the end of any given grade.

Essential characteristics of a general achievement test—Before considering the reasons for the qualifications stated in the preceding paragraph, let us see what must be the nature of a test capable of serving the purpose just stated. For example, if a reading test is to be capable of showing that John Smith, a sixth-grader, can now read better than the average ninth-grader, it must contain some items that the typical sixth-grader, or even the typical eighth-grader, cannot fairly be expected to handle. If an arithmetic test intended for Grades VI to VIII is to demonstrate that Frank Brown, in the eighth grade, is capable of solving verbal problems that are far beyond the ability of most of

his classmates, it must contain some (altho perhaps very few) verbal problems that only a small percent of eighth-graders, and perhaps *no* sixth-graders, will be able to solve. In other words, a test intended for any given grade level must contain a certain proportion of items that call for a level of ability which only a very small number of superior pupils in that grade can reasonably be expected to attain.

Tests that are intended to reveal dependable profiles of individual achievement must therefore contain items extending over a very wide range of difficulty, since the range of ability among the pupils to be measured is itself so very wide. This would be almost equally true of a test intended for the sixth grade alone and of one intended for Grades VI to VIII, since the range of ability in the sixth grade alone has been shown to be almost as great as that in Grades VI to VIII combined.

To serve its purpose most effectively, a test of this type must actually utilize as much as possible of the whole range of possible scores. That is to say, the scores made on the test should range from near zero to near the highest possible score. If the test intended for Grades VI to VIII contains too many items that can be answered by the slow sixth-grader, it will not be possible, without making the test too long, to include enough items that will discriminate between superior eighth-graders. It is only to be expected, then, that the backward sixth-grader will find very few items that he can answer; in other words, some near zero scores are to be expected. The purpose of the test is to discover *differences* between pupils. Items that *all* pupils can answer will obviously not help to discover such differences, and therefore the test should contain very few if any such items. Ideally, these tests should be so adjusted in difficulty that the poorest sixth-graders will score near zero, the average seventh-graders will make half of the possible score, and the best eighth-graders will just fall short of a perfect score. In actual test construction, some compromises must be made with this ideal because of other considerations, but in general the distributions of scores on tests like those mentioned earlier will have roughly these characteristics.

Relation of test content to curriculum content—The foregoing considerations have a number of important implications concerning the interpretation of test results in relation to curriculum content. The major purpose of these tests is to show, for each individual pupil, how his proficiency in each of the skills measured compares with that of other pupils, and how his relative proficiency compares from skill to skill. As pointed out above, such information is essential to effective individualization of instruction and to adequate educational guidance of the pupils. To provide this information, the tests must contain a certain proportion of items that the average eighth-grader cannot reason-

ably be expected to answer, a larger proportion of items that are beyond the ability of the average seventh-grader, and a still larger proportion that are beyond the average sixth-grader.

Because of this fact, the content of the tests cannot be taken as an indication of what specific subjectmatter should be taught at any grade level. A small proportion of the items in a test intended for Grades VI to VIII, for example, will be concerned with specific skills which have been acquired by most pupils by the time they reach the fourth grade. Other items will be concerned with specific skills which should be mastered by most pupils in the fifth grade, and some with skills that only the eighth-graders can be expected to master. Still other items should perhaps not be included even in the eighth-grade course of study, but are included in the test in order to identify those pupils who have on their own initiative gone beyond the formal content of their eighth-grade classes. Each item in the test may be properly taught at some grade level, but there is nothing in the form or arrangement of the test to indicate at what level any given item should be taught.

These facts are clearly of crucial importance in deciding what to do about the test results in a program for improvement of instruction. Many teachers in the past have considered the content of the tests as equivalent to a list of "minimum essentials." They have used the tests as a source of instructional material, and have attempted, by means of intensive drill on specific items, to get all of their pupils to do *all* of the things which are measured by the tests. Such practise is inevitably futile, but even worse, it may do serious harm to the pupils involved. Each of these tests contains some items that are definitely beyond the ability of all but very superior eighth-grade pupils. *Under no circumstances should the average sixth-grader, or even the average eighth-grader, be drilled upon such items, and condemned if he cannot handle them.*

No standardized achievement test, if only because of its limited sampling, can be taken as a safe guide to what should be taught at any grade level. Moreover, because of the characteristic lack of agreement, in local courses of study and among curriculum authorities, regarding the proper grade placement of specific instructional materials, it is extremely doubtful that a test could be constructed so as to serve as such a guide. The test results may sometimes indicate the *need* for curriculum reorganization, but the test itself will not indicate *how* that reorganization should be effected. To secure such help, the teacher should refer not to the test but to the better courses of study now available; to reports of curriculum investigations; and to the writings of authorities on the curriculum.

If, then, the average test score made by a class of pupils is seriously below the norm, the thing to do, so far as the local curriculum is con-

cerned, is to check that curriculum against the sources just mentioned, to reorganize it if necessary, and then to attempt to do a better job of teaching the materials that are adapted to the level of the class. Perhaps the worst thing that can be done is to insist that all pupils do everything measured by all items of the test. Such a practise not only will usually fail to raise the scores on later tests, but may even lower them. Time spent on tasks for which the pupils are not yet ready results in a feeling of futility and loss of confidence, and decreases the amount of time which may be fruitfully spent on tasks within their level of ability. Even tho the teacher may succeed, by intensive instruction in some narrow area, in raising the scores of her pupils on a test limited to that area, too often the price paid is the serious neglect of other and perhaps more important aspects of instruction.

Summary—The essential points in the foregoing discussion may be stated briefly as follows:

1. Comprehensive standardized achievement tests for elementary-school use measure skills and abilities which are continuously developed over a period of years, both in and out of school and in all departments of instruction. No teacher can alone be held responsible for the performance of her pupils on such tests.
2. The major purpose of a standardized test is to reveal individual differences.
3. Individual differences in any single grade are sometimes more than ten times as great as the differences in average ability from one grade to the next.
4. To serve its purpose effectively, a test intended for any one grade must contain some items far beyond, and others far below, the ability of the average pupil in that grade.
5. The content of such a test cannot indicate what should be taught at any grade level. Neither can such tests reveal how well the teacher has "covered" the course of study for her grade and subject.
6. When a standardized test is uncritically used as a list of minimum essentials, or when all pupils are drilled on all of the test content, many pupils are forced to attempt tasks for which they are not ready or which are so far beyond their ability as to destroy their self-confidence and deaden their interest.
7. The standardized test should be looked upon solely as a *measuring* instrument, and not as a teaching instrument[6] or as an abbreviated course of study.

[6] For a contrary opinion, see the article by Brownell in this chapter. Brownell does not argue that courses of study should be based upon the content of standardized tests, but he believes that an important function of *every* good test is to improve instructional practise directly.—*Editorial Committee.*

SOME NEGLECTED CRITERIA FOR EVALUATING CLASSROOM TESTS

WILLIAM A. BROWNELL

Professor of Educational Psychology, Duke University, Durham, North Carolina

STANDARD TEXTBOOKS on educational measurement recommend the evaluation of testing instruments on the basis of such technical criteria as their validity, reliability, objectivity, adequacy, and the like. Important as are these criteria, there are others fully as important but much less commonly recognized. These other criteria relate directly to the processes of teaching and of learning. According to these latter criteria, a test is good if it furthers sound, economical learning and advances the quality of instruction.

Only in small degree are considerations of teaching and learning involved in the typical discussion of the better-known test criteria. Validity and reliability, for example, have, in the hands of the measurement experts, become increasingly statistical in nature and correspondingly remote from the classroom situation. Indeed, some experts have insisted that teaching and measurement must be divorced from each other if both are to realize their possibilities.

The rather general acceptance of this artificial distinction between teaching and learning on the one hand, and evaluation on the other, is the reason for this article. That the distinction may have values for certain types of research need not be denied. At the same time, it should be stressed that in the practical enterprise of educating children, teaching and learning are inseparably united with measurement.

In the following paragraphs five criteria are proposed for evaluating tests in relation to the instructional process. Other criteria also should probably be mentioned, but the space available is hardly sufficient for adequate explanation, illustration, and defense of the five to be considered. These five criteria are listed first, and are then discussed in turn.

1. Does the test elicit from the pupils the desired types of mental process?
2. Does the test enable the teacher to observe and analyze the thought processes which lie back of the pupils' answers?
3. Does the test encourage the development of desirable study habits?
4. Does the test lead to improved instructional practise?
5. Does the test foster wholesome relationships between teacher and pupils?

Criterion 1: Does the test elicit from the pupils the desired types of mental process?—This criterion implies that there is a variety of mental processes with which one may react to subjectmatter. Exactly how many there are, no one would undertake to say, but certainly there are many. In view of the overemphasis placed by current testing prac-

tises on one or two of these mental processes, it may be well to note what some of the others are.

Odell,[1] omitting such mental functions as interests, attitudes, purposes, and the like, and restricting his list to the more purely intellectual functions, mentions the following twenty:

1. Selective recall
2. Evaluative recall
3. Comparison of two things on a single designated basis
4. Comparison of two things in general
5. Decision, for or against
6. Cause or effect
7. Explanation of the use or of the exact meaning of a phrase or statement
8. Summary of a unit of material
9. Analysis
10. Statement of relationships
11. Illustrations or examples (original)
12. Classification
13. Application of rules or principles to new situations
14. Discussion
15. Statement of aim, or author's purpose
16. Criticism as to adequacy, relevancy, etc.
17. Outline
18. Reorganization of facts
19. Formulation of new questions or problems
20. New methods of procedure.

To this rather formidable list may be added others from Raths' report:[2] (21) interpretation of data, (22) ability to generalize, and (23) ability to propose and test hypotheses. Nor is the list complete as yet. For example, Scates[3] suggests (24) ability to draw inferences, (25) ability to support a position, and so on.

It is the business of the school to see that children, so far as possible, develop *all* these types of mental process in relation to the curricular content they study. It is not enough to be able to recall facts; the facts learned must function. No longer can we delude ourselves in the trust that knowledge of facts is equivalent to ability to use them, or even that a measure of the former is also a measure of the latter.[4] Instead, we must deliberately set out first to teach the desired mental processes, and then to measure the degree to which instruction has developed these processes.

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[1] Odell, Charles W. *Traditional Examinations and New Type Tests.* New York: Century Co., 1928. p. 205-06.

[2] Raths, Louis. "Basis for Comprehensive Evaluation." *Educational Research Bulletin (Ohio State University)* 15: 220-24; November 11, 1936.

[3] Scates, Douglas E. "Complexity of Test Items as a Factor in the Validity of Measurement." *Journal of Educational Research* 30: 82; October 1936.

[4] For data on this question, see: Tyler, Ralph W. "The Relation Between Recall and Higher Mental Processes." *Education as Cultivation of the Higher Mental Processes.* (Charles H. Judd and others.) New York: Macmillan Co., 1936. Chapter II, p. 6-17.

In this connection it may not be amiss to note a definite limitation of so-called "objective" tests. It is comparatively easy to construct true-false, or multiple-choice, or completion test items to measure factual knowledge. Measurement experts are probably right in asserting that these new test forms can be used to evaluate other kinds of mental process as well. Be that as it may, a scrutiny of standardized tests (prepared by these same experts) discloses a dearth of questions which measure the abilities numbered 4, 8, 10, 13, 14, 18, 22, and many others in the list presented above. Furthermore, most teachers are as yet unequipped to adapt to these new ends the objective test forms which they commonly use to measure factual knowledge. To do so would require for them an excessive amount of time and considerable technical skill.

To summarize, a test, according to Criterion 1, is good to the extent that it calls forth the mental processes which should be measured. There are many different kinds of such processes. Teachers and administrators must know which ones they want to measure and must construct their tests accordingly. Whether they use objective or traditional test forms matters little, tho in general the essay-type question can be more widely, or at least more readily, adapted to sampling the multiplicity of mental processes.

Criterion 2: Does the test enable the teacher to observe and analyze the thought processes which lie back of the pupils' answers?—This criterion relates to the diagnostic function of measurement. For instructional purposes that test is most valuable which reveals most completely and most intimately the elements of weakness in the child's learning. There are many "diagnostic" tests, but few of them actually diagnose. Most of them yield scores; few of them get at the basic causes of difficulty. The reason is not hard to find: Test answers generally show only the *results* of thinking, not the *process* of thinking.

Particularly is this true in the case of new-type tests. Here the pupil selects an answer from two or more given him, or he fills in a blank space in the question. *Why* he selects the answer he does, or *how* he hits upon the missing item he supplies, can hardly be determined from the test paper. For example, one fifth-grade boy gave the correct answer, *3*, to the following geography question:

In how many zones is North America? . . . . .

Upon being questioned the boy revealed that he was thinking of hemispheres, and not of zones at all, and that he had written *3* because North America is in "the western, the northern, and one other that I can't remember." His thinking, which was both incomplete and wrong,

led to an answer which was accepted as correct and was awarded full credit.[5]

In this particular instance, the error in thinking might have been revealed, and credit denied, if a different form of objective test had been used. Still, one can scarcely predict the likelihood of such happenings and devise special test forms to forestall them.

In answering an essay question, on the other hand, the pupil almost necessarily shows something of his thought processes. In some cases his answer may be a fairly complete and faithful record of these processes, thus enabling the teacher to detect deficiencies and to plan specific remedial instruction. In few cases indeed will there be as slight a basis for instructional guidance as is typically found on new-type test papers.

The foregoing statement is not intended as an attack upon the objective test in general. The position taken has been ably presented by Sims[6] and by Monroe,[7] who wrote, "Objective tests are not worthless. . . . If we do not soon attain a more intelligent attitude toward them, it is inevitable that eventually there will develop an uncritical and extreme distrust of them." The same views are expressed elsewhere[8] by the writer of this article.

As in the case of Criterion 1, the particular test form employed is a secondary consideration. The important matter is to construct classroom tests which yield data on the nature of the pupils' thought processes. If in a given instance this purpose is best served by an objective test, then the objective test should be used.

Criterion 3: Does the test encourage the development of desirable study habits?—Educational outcomes are usually stated in adult terms and are intended for adult consideration. Even if he saw them, the typical pupil would not know what such outcomes mean. He determines outcomes for himself from the demands made upon him by the teacher —in reading assignments, in the questioning of the recitation period, in the making of reports, and perhaps most concretely of all, in the examinations set for him. From the grades up thru the graduate school this fact is implicit in the question, "What kind of an examination will it be?"

Within recent years, fortunately, research workers have begun to give serious study to the question raised in Criterion 3 and, again fortunately, the data they have collected are in substantial agreement.

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[5] From an unpublished study by Earl V. Pullias, Duke University, Durham, North Carolina.

[6] Sims, Verner M. "Objective Tests and Teachers' Measurements." *School and Society* 36: 300-02; September 3, 1932.

[7] Monroe, Walter S. "Hazards in the Measurement of Achievement." *School and Society* 41: 48-52; January 12, 1935.

[8] Brownell, William A. "The Use of Objective Measures in Evaluating Instruction." *Educational Method* 13: 401-08; May-June 1934.

First, Terry [9] demonstrated that college students review for essay tests quite differently than for objective tests. Such was the report of 83 percent of his experimental subjects. Terry's findings have been corroborated in every respect by Douglass and Tallmadge,[10] by Meyer,[11] and by Class,[12] in investigations which differed somewhat in the experimental procedures employed.

Second, not only do college students vary their study methods for essay and for objective tests; they also vary their methods for different kinds of objective tests. What seems to be sound evidence on this point has been furnished by Terry,[13] and even more convincingly by Meyer.[14]

Third, the type of test preparation influences (1) scores on tests given at once,[15] (2) scores on tests given after a lapse of time,[16] and (3) personal attitudes toward what is studied.[17]

In view of these facts it becomes important to know just what types of study habits are encouraged by different kinds of tests. Here again the investigators cited are in agreement. The following quotations from Terry can be matched by conclusions reached by the others:

> The most striking characteristics of . . . methods of study (for objective tests) is their emphasis on details. More than one-half of the methods mentioned . . . are concerned with small units of subjectmatter, such as words, phrases, and sentences. If the student uses methods of this kind too consistently, he risks the possibility of acquiring the vice of shallowness or superficiality.[18]
>
> The outstanding characteristic of the methods (of study employed in preparing for essay tests) is their emphasis on the study of large units of subjectmatter.[19]

Now, there are occasions (1) when superficial knowledge is justified, (2) when what is learned needs to be remembered for only a short time, and (3) when the mastery of details is important. On such occa-

[9] Terry, Paul W. "How Students Review for Objective and Essay Tests." *Elementary School Journal* 33: 592-603; April 1933.

[10] Douglass, Harl R., and Tallmadge, Margaret. "How University Students Prepare for New Types of Examinations." *School and Society* 39: 318-20; March 10, 1934.

[11] Meyer, George. "An Experimental Study of the Old and New Types of Examination: I. The Effect of the Examination Set on Memory." *Journal of Educational Psychology* 25: 641-61; December 1934. ¶ Meyer, George. "The Essay Type of Examination." *American School Board Journal* 89: 17-18; December 1934.

[12] Class, E. C. "The Effect of the Kind of Test Announcement on Students' Preparation." *Journal of Educational Research* 28: 358-61; January 1935.

[13] Terry, Paul W. "How Students Study for Three Types of Objective Tests." *Journal of Educational Research* 27: 333-43; January 1934.

[14] Meyer, George. "The Essay Type of Examination." *American School Board Journal* 89: 17-18; December 1934. ¶ Meyer, George. "An Experimental Study of the Old and New Types of Examination: II. Methods of Study." *Journal of Educational Psychology* 26: 30-40; January 1935.

[15] Class, E. C., *op. cit.* ¶ Meyer, George. "An Experimental Study of the Old and New Types of Examination: I. The Effect of the Examination Set on Memory." *Journal of Educational Psychology* 25: 641-61; December 1934.

[16] Meyer, George. "An Experimental Study of the Old and New Types of Examination: I. The Effect of the Examination Set on Memory." *Journal of Educational Psychology* 25: 641-61; December 1934.

[17] Douglass, Harl R., and Tallmadge, Margaret, *op. cit.*

[18] Terry, Paul W. "How Students Review for Objective and Essay Tests." *Elementary School Journal* 33: 592-603; April 1933.

[19] Terry, Paul W., *ibid.*

sions, the announcement of an objective test should lead to the use of appropriate study methods. On these same occasions the announcement of an essay test might not have equivalent results. On the other hand, there are many occasions when a grasp of relationships, an appreciation of cause and effect, and the like are important. Then the right sort of preparation would most probably follow the announcement of an essay test.[20]

Criterion 3 thus calls attention to an important aspect of the teaching-learning-testing situation: The type of test given determines the "set" adopted by the pupil in his study. If this set is made habitual by reason of the teacher's more or less exclusive use of a particular type of test, the pupil builds his study habits accordingly and neglects other valuable methods of attack upon subjectmatter. The following general conclusion reached by Meyer is worth repeating:

> When equal amounts of time are spent in preparing for an examination it is much more economical to spend one's time preparing for a recall type of examination (completion or essay), because that type of preparation gives one a more complete mastery of the material as measured in terms of recognition and recall.[21]

Criterion 4: Does the test lead to improved instructional practise?—Jones states, "Unconsciously a teacher tends to match his instruction with his form of examining, or at least both will tend to be associated." [22] Somewhat earlier, Sims had expressed a similar view and had illustrated his meaning in this way: "One could hardly imagine a teacher, testing month after month, year after year, on narrow, single items, who did not eventually think of the acquisitions of such habits as being the ends of instruction." [23]

The weight one attaches to such opinions is pretty well determined by one's own observations and prejudices. Those who agree with Sims and Jones argue that just as the student adapts his study procedures to the type of test which has been announced, so the teacher adapts her instruction to fit the type of test she intends to give. On the other hand, those who stand for the separation of testing and teaching quite naturally see no effects of the former upon the latter. The difference of viewpoint is well reflected in the recent symposium on the influence of measurement on instruction.[24] Of the twelve educational leaders who

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[20] All of the investigations cited, and another now under way at Duke University, employed college students as subjects. It is possible, tho rather improbable, that markedly different results would have been obtained from elementary-school pupils.

[21] Meyer, George. "An Experimental Study of the Old and New Types of Examination: I. The Effect of the Examination Set on Memory." *Journal of Educational Psychology* 25: 658; December 1934.

[22] Jones, Edward S. "The Relationship of Examinations and Instruction." *Tests and Measurements in Higher Education.* (Edited by William S. Gray.) Chicago: University of Chicago Press, 1936. Chapter XIV, p. 200.

[23] Sims, Verner M., *op. cit.*

[24] Woody, Clifford, and others. "A Symposium on the Effects of Measurement on Instruction." *Journal of Educational Research* 28: 481-527; March 1935.

participated, four were frankly convinced that use of standard tests and reliance on objective measures had lowered rather than raised the general level of instruction. About the same number of participants were convinced that the opposite was true, while the rest were undecided or non-committal.

Whether or not the newer testing technics have been an unmixed blessing for instructional practise may be left as a problem for future research. Whatever the answer, it will not lessen the importance of Criterion 4. *Any* test, traditional or new-type, which misdirects instruction is to that degree a poor test. Conversely, any test, traditional or new-type, which improves instructional practise is to that degree a good one.[25]

Criterion 5: Does the test foster wholesome relationships between teacher and pupils?—No one who has observed children under test conditions can doubt the possible effects of such situations upon their mental health. The pressure imposed by time limits, the excitement induced by rivalry, the tension aroused by eagerness to succeed—all these are fraught with possible dangers of maladjustment. In spite of these self-evident facts, little research attention has been given them. For example, we do not even know for a certainty whether, in general, new-type or traditional tests are preferred by pupils. Such data as we have are inconsistent.[26] Neither do we know when it is, and why it is, that tests, which are pleasurable experiences to young children, become events to be dreaded and avoided by older children. Even textbook writers on the hygiene of school instruction give slight consideration to the examination. One of the most extended discussions is only ten pages long.[27]

Nevertheless, the paucity of quantitative data on the influence of various kinds of test on the teacher-pupil relationship (and on other personal relationships within the school) in no way affects the worth of Criterion 5. Its validity depends upon no such evidence. Even the small amount of defense here offered for the criterion would seem to be superfluous. Nowadays when the social hygiene of the schoolroom and the mental health of pupils are recognized in their true importance, no one is inclined to support practises or procedures which make for disharmony, conflict, and maladjustment. If a test in any way impairs

[25] For a somewhat different point of view on this question, the reader should see the article by Lindquist in this chapter. While admitting that standardized tests are often *misused* as guides to instruction, Lindquist contends that such tests should be looked upon not as teaching instruments, but as measuring instruments only.—*Editorial Committee.*

[26] Jones, Edward S., *op. cit.* ¶ Klise, Nira M. "Student Opinions of Type of Examinations." *School and Society* 24: 23-24; July 3, 1926.

[27] Rivlin, Harry N. *Educating for Adjustment.* New York: D. Appleton-Century Co., 1936.

healthful, wholesome relationships and growth toward integrated personality, that test is bad.

Criterion 5, then, is the most crucial of the five here proposed. A test which meets all other criteria (the commonly recognized ones and the four discussed above) and yet fails to meet this last criterion, must be regarded as an unsatisfactory measuring instrument.

Summary—In brief, the position taken in this article is that teaching and testing must be brought closely into line with each other, and that classroom tests must be evaluated with respect to their effect on teaching and learning. There can be no possible objection to evaluating such tests against the familiar criteria of the measurement experts, namely, validity, reliability, adequacy, objectivity, and so on. On the contrary, such evaluation is wholly desirable. At the same time it may be inadequate, for these criteria have become formalized and abstracted from the teaching-learning situation. On this account the writer suggests that classroom tests be evaluated against five criteria which are definitely related to the teaching-learning situation. To meet the proposed criteria, a test must (1) elicit from pupils the desired types of mental process, (2) enable the teacher to observe and analyze the thought processes which lie back of the pupils' answers, (3) encourage the development of desirable study habits, (4) lead to improved instructional practise, and (5) foster wholesome relationships between teacher and pupils.

SCIENTIFIC MEASUREMENT in education is closely related to educational progress. Effectiveness in the field of medicine would be decidedly reduced without the use of the thermometer. It would likewise be difficult to know the results of dietetic feeding except as it is possible to measure accurately change in weight. In the same manner, the effectiveness of the teaching of spelling is decidedly reduced if we pay no attention to measuring how well children can spell before and after they have been taught spelling. . . . The fact that many phases of education are not as yet scientifically measurable by delicately perfected instruments is no excuse for not using the crude measures that are available.—Smith, Henry L., and Wright, Wendell W., *Tests and Measurements,* Silver, Burdett and Co., 1928, p. 5. (Quoted by permission of the publishers.)

MEASURING THE ATTAINMENT OF NEWER EDUCATIONAL OBJECTIVES

J. W. WRIGHTSTONE

Research Associate, Institute of School Experimentation, Columbia University, New York, New York

THERE is a growing body of evidence that a comprehensive and accurate evaluation of a pupil's growth cannot be obtained from a few tests of his ability to recognize and recall subjectmatter. An index of achievement in recalling facts in the social studies, for example, does not provide an adequate measure of the pupil's ability to obtain, organize, and interpret facts in the social studies, of his ability to generalize from social events, or of his civic interests and attitudes. Curricular objectives in both elementary and secondary schools have become much more comprehensive than the instruments thus far devised for measuring pupil progress. Hence, many educators have felt the need for new tests and other instruments of evaluation. Many schools have reached a stage of development, both in curricular practise and in testing, where new objectives have definitely created a demand for new and better tests. Changed concepts of what a school program should accomplish require a reconstruction of our thinking with regard to the measurement of results. This does not mean that the older tests must be cast aside. Rather it means that they must be supplemented by newer and more inclusive means of evaluation. Let us consider briefly what has been done and what may be done along this line.

Examples of tests designed to meet new needs—There is, first of all, a need for tests of essential skills which cut across traditional subjectmatter lines and even enter new fields of study. An adequate test of skills in obtaining information, for example, would represent reading, English, social studies, science, arithmetic, and library instruction. Several pencil-and-paper tests[1] at the elementary- and secondary-school levels have already been prepared in tentative form to meet certain phases of this new need. Much additional work is necessary to make sure that these tests are valid measures of pupil behavior in actual life situations.

Another important aim in a progressive educational program is to develop the power to interpret, to infer, or to generalize from facts and information. This power is distinctly different from memory, recog-

[1] Lindquist, E. F., and others. *Iowa Every-Pupil Tests of Basic Skills.* Iowa City, Iowa: Bureau of Educational Research and Service, State University of Iowa. ¶ Pirtle, Mrs. Lela N. *Library Test-6B.* Thomas Jefferson High School, San Antonio, Texas. ¶ See also: Barnes, Emily Ann, and Young, Bess M. *Children and Architecture.* New York: Teachers College, Columbia University, 1932. p. 259-61.

nition, and recall of facts, and must be measured separately. What do the stated facts mean? What do the stated facts not mean? Recently a test was devised to measure the ability of pupils to draw inferences from described facts or data in the social studies.[2] Facts in the test are presented in verbal, tabular, and graphic form; in content they are statistical and non-statistical. The need for this new type of test has arisen from the emphasis which progressive schools place upon *thinking about* and *thru* facts rather than merely *remembering* and *reciting* them.

Still another new need in testing arises from the emphasis in the modern elementary school upon interests, attitudes, and beliefs. Thurstone and others at the University of Chicago have developed some new tests, especially in the field of civic and social attitudes.[3] Further instruments will undoubtedly be developed for measuring these objectives of education. Experiments are now in progress at the Ohio State University Elementary School in appraising children's interests by the paired-comparison method,[4] which seems a fruitful approach to this problem.

One of the most important new objectives of elementary education is the personal and social adjustment of children. In these areas new self-descriptive tests, rating scales such as the *Haggerty-Olson-Wickman Behavior Rating Schedules*,[5] and case-history technics provide partial methods of appraising adjustment and emotional status. These devices are adapted for use by trained workers in both elementary and secondary schools. Symonds [6] has provided a comprehensive discussion of such devices.

How schools can aid in the improvement of tests—Altho considerable progress has already been made, a great deal of work lies ahead in the development of these newer instruments. They must be tried out, criticized, revised, and reconstructed until they measure validly and reliably the important objectives of the curriculum. Not only must test technicians help in the processes of test construction, but experienced and interested classroom teachers must cooperate also. Suggestions as to what objectives are of most value, how the attainment of these objectives can be judged, and how practical are the ideas of test experts for measuring such attainment in the classroom, must evidently come from teachers and principals.

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[2] See: Wrightstone, J. W. "Measuring Some Major Objectives of the Social Studies." *School Review* 43: 771-79; December 1935. ¶ Clark, Marion G. *Exercises in the Use of Historical Evidence.* New York: Charles Scribner's Sons, 1935.

[3] Thurston, L. L., and Chave, E. J. *The Measurement of Attitude.* Chicago: University of Chicago Press, 1929. 96 p.

[4] See: Frutchey, F. P. "Collecting Evidence of Children's Preferences." *Educational Research Bulletin (Ohio State University)* 14: 173-78; October 16, 1935.

[5] Published by World Book Co., Yonkers-on-Hudson, New York.

[6] Symonds, P. M. *Diagnosing Personality and Conduct.* New York: Century Co., 1931. 602 p.

One way in which the staff of an elementary school can aid in the development of new tests is to go thru the list of purposes or objectives of the school, and indicate after each objective any methods which it thinks practicable for obtaining evidence of the degree to which this purpose is being realized. In making such notations, three kinds of statement are possible. The staff may state that valid evidence about the attainment of the purpose is already being gathered by means of some particular test or other procedure. For example, a school which includes among its purposes the development of facility in silent reading might state after this objective that evidence could be obtained thru the use of such a test as the *Iowa Silent Reading Tests*,[7] and that this was already a part of the plan of evaluation in the school. In the case of certain other objectives, the staff might be able to indicate practical ways of obtaining evidence which had not heretofore been a part of the school program for evaluation. For example, one of the purposes of the elementary-school curriculum may be to develop discriminating taste in the selection of reading materials. The teachers might indicate that evidence on this point could be obtained by having each pupil keep a reading diary in which he would state what books or magazine articles he had read in school, and his own reaction to each selection read. There will probably be a third group of objectives, such as those concerned with the development of attitudes, habits, or interests, after which the staff will put question marks indicating that it does not know any practicable methods which can be used in the school for measuring the attainment of these purposes.

In areas of education where more reliable means of getting evidence of pupil growth are needed, teacher committees may be organized. For example, a committee of interested teachers may work upon methods for appraising the development of social habits. Another committee may be concerned with means for discovering growth in social attitudes, while a third group strives to discover methods for determining pupils' interests. Each committee will be attacking an important problem in the development of instruments for evaluating modern education.

A proposed plan for measuring the outcomes of elementary education—The revision of the elementary-school curriculum in New York State has led to a reformulation of the cardinal objectives of elementary education. These objectives are described in a small pamphlet issued by the State Education Department.[8] This pamphlet states that the func-

[7] Published by the World Book Company, Yonkers-on-Hudson, New York.

[8] New York Council of Superintendents, Committee on Elementary Education. *Cardinal Objectives in Elementary Education*. Second Report. Albany: New York State Education Department, 1929. p. 13-18.

tion of the public elementary school is to help every child: (1) to understand and practise desirable social relationships; (2) to discover and develop his own desirable individual aptitudes; (3) to cultivate the habit of critical thinking; (4) to appreciate and desire worthwhile activities; (5) to gain command of the common integrating knowledge and skills; and (6) to develop a sound body and normal mental attitudes.

As these cardinal objectives are reviewed, it becomes increasingly apparent that thoroly valid and reliable measures are now available for only one of the purposes listed, number 5. This objective, "to gain command of the common integrating knowledge and skills," includes such abilities and habits as correct spelling, writing, and reading, as well as the arithmetical and social studies skills. In a few other areas an occasional test may be found which allows a valid and reliable measurement of pupil attainment. It is apparent, however, that for the remaining five cardinal objectives of elementary education in New York State, new tests and measures must be devised if an objective and valid appraisal is to be carried on.

As a tentative and partial basis for measuring pupil attainment in all of these areas, the outline shown in Table 1 has been prepared. This outline purports merely to suggest some profitable methods for making an evaluation in each field covered by the cardinal objectives listed above. These initial suggestions may need to be revised thoroly if and when practical application of them is attempted in school situations. They are presented here in the hope that they may help principals and teachers to develop more complete programs of evaluation than have usually been carried on in the past.

TABLE 1—SUGGESTED APPROACHES TO THE MEASUREMENT OF IMPORTANT EDUCATIONAL OUTCOMES

OBJECTIVE 1: TO UNDERSTAND AND PRACTISE DESIRABLE SOCIAL RELATIONSHIPS	
Definition of Objective	Suggested Approaches to Measurement
Since character is largely determined by the relationships of an individual to his fellows, the public school will continue to encourage the pupil's practise of the older virtues, namely, trustworthiness, reliability, obedience, kindness, courtesy, and loyalty. More specifically, the goals to be sought in developing not only the pupil's ideals but also his conduct with his fellows, are:	The measurement of such specific relationships or factors as respect for others, leadership, initiative, and cooperation may be attempted by means of observational technics and cumulative observer-diary records such as those described in: Wrightstone, J. W. "Constructing an Observational Technic." *Teachers College Record* 37: 1-9; October 1935. Such aims as *F* and *G* in the left-hand

OBJECTIVE 1: TO UNDERSTAND AND PRACTISE DESIRABLE SOCIAL RELATIONSHIPS (CONTINUED)

Definition of Objective	Suggested Approaches to Measurement
A. Respect for authority B. Leadership activities C. Self-initiated activities D. Respect for the rights and contributions of others E. Cooperation (team spirit) F. An appreciation of the interdependence of all people G. An interest in civic functions and participation for community betterment.	column presumably might be measured by specially devised pencil-and-paper tests, supplemented by anecdotal records of the kind suggested in: Randall, J. A. "The Anecdotal Behavior Journal." *Progressive Education* 13: 21-26; January 1936.

OBJECTIVE 2: TO DISCOVER AND DEVELOP HIS OWN DESIRABLE INDIVIDUAL APTITUDES

Definition of Objective	Suggested Approaches to Measurement
It is the function of the elementary school to develop in every child the ability to express his ideas thru such activities as: A. Telling and writing stories B. Writing poetry C. Dramatization D. Drawing and painting E. Modeling F. Construction G. Projects H. Music I. Dancing J. Games and sports K. Social contacts L. Personal conversation M. Leading N. Following.	Certain phases of individual interests and aptitudes might be measured validly by a test employing the paired-comparison technic, such as that devised at the Ohio State University Elementary School. See: Weedon, Vivian. "A Technic for Determining Interest." *Educational Research Bulletin (Ohio State University)* 13: 191-97; November 14, 1934. Other phases might be measured by cumulative observer-diary records, and by qualitative scales of judgment employing the equal-appearing-interval technics such as are described in: Wrightstone, J. W. "Constructing an Observational Technic." *Teachers College Record* 37: 1-9; October 1935.

OBJECTIVE 3: TO CULTIVATE THE HABIT OF CRITICAL THINKING

Definition of Objective	Suggested Approaches to Measurement
Long before he starts to school the child begins to reason from the data at hand. Even before learning to talk, he finds ways and means of attaining his desires; in his own childish way, he decides between two courses of action; even his attempts thru trial and error represent the basic raw material of the thinking process. From the moment the child enters the school, it should help him realize the need for, and give him practise in, the art of testing his own thinking. Thruout the elementary	This objective might be measured validly above the third-grade level by a battery of especially constructed pencil-and-paper tests devoted to the abilities of pupils in: 1. Obtaining facts for problems 2. Organizing facts 3. Interpreting or explaining facts 4. Applying facts to new situations For a more extended discussion of such tests, see: Wrightstone, J. W.

OBJECTIVE 3: TO CULTIVATE THE HABIT OF CRITICAL THINKING (CONTINUED)

Definition of Objective	Suggested Approaches to Measurement
grades it is the duty of teachers to help children develop ability: A. To recognize problems B. To find, select, and reject evidence bearing upon these problems C. To organize materials D. To weigh evidence E. To draw conclusions, that is, to render judgment F. To test their conclusions.	"New Tests for New Needs." *Educational Method* 15: 407-11; May 1936.

OBJECTIVE 4: TO APPRECIATE AND DESIRE WORTHWHILE ACTIVITIES

Definition of Objective	Suggested Approaches to Measurement
It is a function of the elementary school to help every child not only to desire and appreciate worthwhile activities, but also to participate in them for the pure enjoyment he gains from such participation. The habits of childhood determine adult life. If every child develops an appreciation of, a desire for, and the habit of participating in varied activities for pure enjoyment, there need be no fear as to how he will use whatever leisure time adult life may give him. Activities to be encouraged in the elementary school are: art, music, reading, games and sports, handwork, experimentation, travel, trips to places of community interest, and contact with nature in its various forms. Not the least important of the goals to be attained under this objective is the capacity to enjoy being alone. This objective in its various aspects involves not only a reorganization of the extracurricular activities of the school, but also a stimulation of the child's interest and enjoyment thru regular curricular activities.	This objective might be measured by instruments very similar in nature and construction to those proposed for Objective 2, "To Discover and Develop His Own Desirable Individual Aptitudes." There seems to be a great deal of overlapping between Objectives 2 and 4, altho sufficient differences may exist to permit development of distinctly separate instruments of measurement.

OBJECTIVE 5: TO GAIN COMMAND OF THE COMMON INTEGRATING KNOWLEDGE AND SKILLS

Definition of Objective	Suggested Approaches to Measurement
While the subordinate elements of this objective are classified under the general heading of "abilities," the attainment of each one assumes the development of an ideal concerning it and an appreciation of its value.	

OBJECTIVE 5: TO GAIN COMMAND OF THE COMMON INTEGRATING KNOWLEDGE AND SKILLS (CONTINUED)

Definition of Objective	Suggested Approaches to Measurement
A. The ability:	
1. To speak easily with freedom from gross errors	Rating scales on habits and qualities of speech, constructed by a teachers' committee
2. To organize and present ideas clearly and consecutively in oral language	Rating of a stenographic record of several samples of the pupil's oral expression
3. To listen attentively to the oral expression of others	Records of teacher observation related to the attention of the pupil, and subsequent relevant questions or comments
4. To organize and express thoughts in written form	Rating samples of pupil's work by means of a qualitative scale (Hillegas,[a] Trabue,[a] Hudelson,[b] etc.)
5. To use good form, order, and arrangement: margins, spacing, paragraphing, capitalization, punctuation, abbreviation, syllabication	Pencil-and-paper test, or rating of samples of pupil's work upon a basis of error count per 100 words
6. To spell correctly one's vocabulary	Spelling scale (Morrison-McCall,[b] etc.)
7. To write with ease, legibility, and speed	Handwriting scales (Thorndike,[a] etc.)
8. To understand and use title page, index, table of contents, and appendix of a book	Standardized achievement test, such as the *Iowa Every-Pupil Tests of Basic Skills* (Test B)[c]
9. To read either silently or orally, with ease, speed, and comprehension, material suitable to his age level	Standardized achievement test, such as the Metropolitan,[b] Stanford,[b] etc.
10. To use the voice in an agreeable way	Rating scales which might be especially devised by a committee of teachers
11. To reproduce a simple story, news item, or part of a lesson after one reading	Special test which might be especially devised by a teacher or a committee
12. To observe accurately	Writing a description of some object or objects displayed for an equal period of time to all pupils
13. To perform accurately the four fundamental operations in arithmetic, and to know when to use them	Standardized achievement test (Stanford,[b] Metropolitan,[b] *Iowa Every-Pupil Tests of Basic Skills* (Test D),[c] etc.
14. To use the more common kinds of measuring devices	Performance scales on measuring the classroom and playground with footrule, yardstick, etc.
15. To understand and use arithmetical language	*Analytical Scales of Attainment: Arithmetic*[d]
16. To understand and use the forms of social arithmetic common to his age level	*Analytical Scales of Attainment: Arithmetic*[d]

OBJECTIVE 5: TO GAIN COMMAND OF THE COMMON INTEGRATING KNOWLEDGE AND SKILLS (CONTINUED)

Definition of Objective	Suggested Approaches to Measurement
17. To understand geographical principles and their applications to problems of life	Special test (Parker-Calkins tests[e] may provide significant suggestions)
18. To read and use maps for representing ideas	Special tests (Parker-Calkins tests[e])
19. To reconstruct (in imagination) the experiences of people who lived in the past	Essay-type tests, rated according to qualitative scales, like Hillegas,[a] etc.
20. To understand the civic and social principles upon which American democracy is founded	
21. To use dictionary, encyclopedia, atlas, indexes, and other reference materials	Special test, or *Iowa Every-Pupil Tests of Basic Skills* (Test B)[c]
22. To know and appreciate the elements of natural and physical science in the child's environment.	Test of concepts and attitudes in science, especially devised by a committee of teachers.

OBJECTIVE 6: TO DEVELOP A SOUND BODY AND NORMAL MENTAL ATTITUDES

Definition of Objective	Suggested Approaches to Measurement
A. Physical health	
1. Proper habits and attitudes with respect to the following, based upon adequate knowledge: (a) cleanliness, (b) fresh air, (c) exercise and recreation, (d) bodily processes, (e) relaxation, rest, and sleep, (f) posture, (g) protection against disease—quarantine, (h) care of eyes, ears, throat, scalp, feet, hands, skin, nails, and teeth, (i) healthful dress, (j) avoidance of preventable accidents, (k) foods—eating and drinking	Existing tests for health information and knowledge, as well as special tests for health attitudes (e. g., the *Gates-Strang Health Knowledge Test*[a]) Adaptation of the Rogers battery of physical-capacity tests and the use of a physical-fitness index, or use of the *Neilson-Cozens Achievement Scales in Physical-Education Activities*
2. Knowledge of and ability to practise "first aid"	Special pencil-and-paper tests and a performance scale
3. Knowledge of the effect of harmful drugs, narcotics, and alcoholic stimulants	
B. Mental health	
1. Habits of (a) concentration, perseverance (driving oneself now to attain an ultimate end later), (b) generosity, (c) orderliness, (d) emotional stability (balanced control of mental states)	Evidence for this might be gained from tests of emotional stability (e. g., the *Woodworth-Mathews Personal Data Sheet*)[f] and from anecdotal records and observations which were suggested for Objective 1, "To Understand and Practise Desirable Social Relationships." See also the *Haggerty-Olson-Wickman Behavior Rating Schedules*[b].

OBJECTIVE 6: TO DEVELOP A SOUND BODY AND NORMAL MENTAL ATTITUDES (CONTINUED)

Definition of Objective	Suggested Approaches to Measurement
2. Attitudes of (a) interest in people and things, (b) desire to cooperate, (c) self-control and justifiable self-confidence, (d) willingness to work, (e) dissatisfaction with failure and satisfaction with accomplishment, (f) tolerance of ideas, (g) cheerfulness and friendliness, (h) sense of humor, (i) optimism.	

[a] Published by the Bureau of Publications, Teachers College, Columbia University, New York, New York.
[b] Published by the World Book Company, Yonkers-on-Hudson, New York.
[c] Published by the Bureau of Educational Research and Service, State University of Iowa, Iowa City, Iowa.
[d] Published by the Educational Test Bureau, Minneapolis, Minnesota.
[e] In preparation for publication.
[f] C. H. Stoelting Company, Chicago, Illinois.

Summary—New needs growing from new curricular practises in elementary schools have created demands for new tests. The tests thus far developed to meet these demands show certain major tendencies. First, they are built upon a functional analysis of pupil activities and of the curriculum. In other words, they are constructed in terms of behavior units and changes in children as these are emphasized in the newer objectives of the educational program. Second, the new tests tend to disregard and cut across the conventional subjectmatter lines; a single test of functional pupil behavior may include such materials as are usually found in the traditional subjects of reading, arithmetic, English, social studies, and natural sciences. The construction of these newer tests is still in the experimental stage. The prospects, however, are sufficiently bright to indicate that within a few years we shall have valid and reliable tests for measuring many of the significant achievements of progressive education. To achieve this purpose, our present tests must be revised and reconstructed continuously so that they will measure functional behavior rather than the items of a subjectmatter field. New instruments must be devised for new areas and objectives of education as these emerge in the newer practises of the schools. A large and only slightly explored field of measurement is here open to imaginative, informed, and inventive students of education.

MEASURING SOCIAL AND EMOTIONAL DEVELOPMENT

ROSE H. ALSCHULER, *Director*

and

LABERTA WEISS HATTWICK, *Research Psychologist*
Winnetka Public School Nursery Unit, Winnetka, Illinois

PRACTICALLY ALL INSTRUMENTS so far devised for measuring social and emotional behavior are crude. Probably no one who has attempted to develop a scale of this kind is satisfied with the results. A number of available forms, however, are highly useful in analyzing children's behavior, in measuring progress, and in formulating recommendations for treatment. This article describes certain forms which have been developed and used for these purposes in the Winnetka Public Schools.

The Winnetka school system includes nursery and junior kindergarten groups, as well as the regular kindergartens and the elementary grades. Since the trends of child development at the lower and upper age levels are somewhat different, two separate rating scales are used: (1) a scale for nursery and kindergarten children, and (2) a scale for children in Grades I to VI, inclusive.

THE BEHAVIOR RATING SCALE FOR NURSERY AND KINDERGARTEN CHILDREN

Children from two to five years of age are in a period of very rapid change. Within a single year they may grow from relatively helpless infants who perhaps cannot feed themselves adequately or speak distinctly, into individuals who are able to assume full responsibility for their daily routines. They may change from individuals who have no interest and little facility in making adequate social contacts, into individuals who actively seek and participate in social relationships. Changes are so great that behavior which is characteristic of the two-year-old, such as lack of bladder control, dawdling at meals, dependence upon adults, avoiding play with others, and thumb-sucking, is quite unusual among four-year-old children. Some changes occur so rapidly that marked increase or decrease in usual reactions can readily be noted from month to month.

In general, it may be said that among children of these years, responses to people, to situations, and to materials depend more upon the age of the child than upon his environment. In other words, certain types of behavior seem to be characteristic of two-and-one-half-year-olds, of three-year-olds, and so on.

Types of behavior measured—The rating scale described here was devised specifically to measure the rapid changes that occur in social and emotional development during these early years. Like an intelligence test, it offers an objective tho not infallible method of measuring each child's development in terms of his own maturing processes and his relationship to the group in which he is placed. The scale consists of sixty items of behavior which are common among children of these years. The sixty items are grouped in the following nine categories: (1) eating habits, (2) sleeping habits, (3) enuresis, (4) nervous habits, (5) speech habits, (6) fears, (7) reaction to adults, (8) reaction to children, and (9) other personality reactions. Ratings are based on the frequency with which the various types of behavior occur during a given month. Sample items and the method of rating are shown in Figure I.

Use of the rating scale—This rating scale has been used in the Winnetka Public School Nursery Unit for approximately eight years. To make it of greatest value, careful supplementary records are kept. These include full social and medical histories, which are obtained during individual interviews with parents before the children are placed in any groups. Parents are also asked to fill out the behavior rating scales before the child enters school. Teachers fill them out as soon as they become acquainted with the children. In January and May the parents and teachers again check the children's behavior and fill out the forms as before.

The first report on the rating scale from the parent gives the teacher a picture of the child's social and emotional adjustments as the parent sees them at the time the child enters school. Research data as well as long experience with the scale have shown that the parent's ratings may be accepted as a relatively true picture of the child as he is at home. While the teacher accepts this information as a valuable background for her work with the child, she does not let it color her expectancies. Experience has shown that problems which are common at home may not appear at all in school. Full knowledge of the child's behavior at home as well as at school is considered important for intelligent, consistent handling of the child under all circumstances.

As indicated above, the findings from the behavior scale are integrated with other records and reports, and are discussed at a faculty meeting as early in the year as possible. The integrated reports include the social, medical, and developmental history of the child, the reports of the physical examination and the intelligence test, and the mother's report on the behavior rating scale. Individual progress records are also kept and reported. These are prepared in diary form and cover the

status of the child upon his entrance to the group, as seen by the teacher. They include details of the child's interests, abilities, coordinations, physical habits, and behavior, including his social reactions to children and adults, together with a summary of his problems (if any) and the remedial procedures planned. As early in the year as possible, friendly contacts with the family are established and visits to the home are made.

BEHAVIOR: The habits listed below are those which we expect to occur to some extent in every normal child. They have been worded as problems, since it is usually easier to remember that type of behavior.	Check column which best describes child during the PAST MONTH				
	Never	Less than once a week	Once a week	Several times a week	Daily or more
Nervous Indications					
Sucks thumb or fingers (1) during day					
(2) at rest-nap or bedtime					
Bites nails					
Chews objects					
Picks nose					
Plays with fingers or fingers objects					
Twists hair or clothes					
Handles sex organs					
Twitches any part of body					
Wriggles a great deal when sitting					
Holds body or hands tense					
Laughs, squeals, jumps around excessively					
Reaction to Adults					
Refuses to comply with adult requests					
Ignores requests					
Is hard to reason with					
Seeks attention by calling or showing off					
Asks for unnecessary help					
Looks for praise					
Goes to adult with criticism of others					
Stays close to adult					
Shrinks from notice					
Reaction to Children					
Avoids play with others					
Bosses others					
Gives in too easily					
Refuses to share or take turns					
Grabs toys from other children					
Attacks others (hits, kicks, bites, scratches)					
Is jealous of others					

FIGURE I—A SECTION OF THE FORM FOR RATING NURSERY AND KINDERGARTEN CHILDREN

Altogether, these contacts and reports form the basis for diagnostic, remedial, and therapeutic work. The various forms and methods used are mentioned here because the staff believes that behavior rating scales, like intelligence tests, can be valuable only if their results are used skilfully in conjunction with everything else that can be discovered about any child under discussion. If so used, these instruments greatly augment the insight and precision with which individual children may be handled.

Need for norms—The behavior rating scale, as used thus far, has been without the norms necessary for comparing individual behavior with group behavior. At present the staff is assembling data on over 600 children of nursery-school age, in order to secure such normative material. With this information at hand, the development of the individual child may be seen in relation to that of the group. Actual scores and profile summaries may then be obtained, as in the case of the scale described in the next section of this article.

THE SCALE FOR RATING SCHOOL BEHAVIOR IN GRADES I TO VI

As already stated, the scale just described is helpful in measuring social and emotional adjustments during the early years when relatively gross changes are taking place. By the time children enter the elementary grades, group trends in behavior become relatively insignificant. A study by Van Alstyne and the preprimary faculty of the Winnetka schools [1] revealed practically no measurable differences between children of different ages in the first six grades, with respect to such traits as cooperation, social consciousness, emotional adjustment, leadership, and responsibility. This may have been due to a tendency on the part of the investigators to rate children in comparison with others of their own age, rather than in relation to a more fixed and general standard, or it may be that there is really little change in these behavior patterns during the elementary-school period. At any rate, we find that for children of this age a scale which undertakes to determine their *usual* or *typical* behavior is more useful than one which records the frequency with which certain types of behavior occur.

Nature of the scale—The "Winnetka Scale for Rating School Behavior" was developed to meet this need in Grades I to VI, inclusive. The scale is based upon actual school situations. It contains five general categories: (1) cooperation, (2) social consciousness, (3) emotional adjustments, (4) leadership, and (5) responsibility. Each heading is

[1] Van Alstyne, D.; Hattwick, L. W.; and Totten, H. "A New Scale for Rating School Behavior and Attitudes." *Elementary School Journal* 37: 115-21; October 1936. (A reprint of this article may be purchased from the Winnetka Educational Press, Winnetka, Illinois.) ¶ Van Alstyne, D. "A New Scale for Rating School Behavior and Attitudes in the Elementary School." *Journal of Educational Psychology* 27: 677-94; December 1936.

represented by three different types of situations in which the designated behavior may be observed. For instance, leadership is judged

1. When the child is in an organized group with the teacher present
2. When the child has an opportunity to take responsibility for a group task
3. When the child is in a social situation which allows for initiative.

The types of response which children might make to a given situation are listed under that situation, and are assigned a decile rating (from 1 to 10) on the basis of the 1100 ratings obtained from children initially tested with the scale. An example follows:

When in an organized group with teacher present, the child:

	Decile rating
Is able to lead a group without being nervous or embarrassed	10
Leads group in spite of being nervous or embarrassed	8
Leads small group	7
Does not lead group but is confident in dealing with individuals	6
Tends to be shy with adults but not with children	3
Tends to be shy with children but not with adults	2
Is shy with both children and adults	2

Use of the ratings—The decile ranks make it possible to give a child a definite score on each of the five major traits. This is done by averaging his decile rank for the three situations on which a given heading is based. A profile may then be drawn to show the child's assets and liabilities, and his change in relative position from year to year. The midpoint (fifth decile) on such a profile will represent the median rank of the 1100 children originally tested on the scale. A sample profile is shown in Figure II.

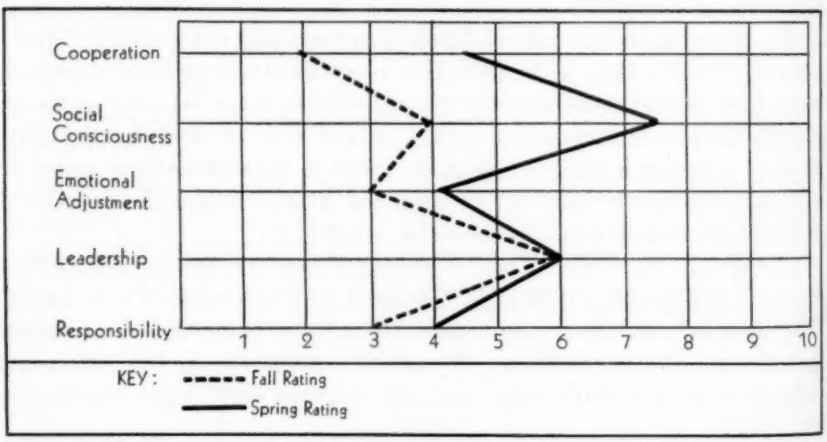

FIGURE II—SAMPLE PROFILES SHOWING A CHILD'S PROGRESS IN CERTAIN TRAITS

The child represented by this profile was below average on all traits but leadership at the time of the fall rating. By spring his position with respect to leadership had not changed, but he had improved on all the other characteristics and had jumped far above the average in social consciousness. It should be noted that the scale is most revealing if used only two or three times during the school year.

Supplementary records—This scale for rating school behavior, like the other rating scale discussed earlier, is but one of a number of forms used for the analysis of children's behavior. At the close of each year a set of six sheets, headed as follows, are filled out in diary form for every child by all teachers in the elementary grades: (1) academic adjustment, (2) social adjustment, (3) individual interests, (4) group experiences during the year, (5) home situations, and (6) methods of handling. These reports, consisting of brief, running commentaries, do not take the place of, but do give the teacher a better insight into, the more objective scales.

CONCLUSION

While the measures of social and emotional adjustment described here are not without their limitations, they are the best instruments for this purpose, both from the standpoint of accuracy and practicality, that have yet been devised for use in the Winnetka school system. The behavior rating form for nursery and kindergarten children, and the diary forms for giving pertinent characterizations at all levels, have already stood the test of time. The scale for rating school behavior in the elementary grades is more recent, and therefore has not had so rigid a test as the others. Its greatest value may perhaps be in its use as a basis for further experimentation in the field of personality measurement.

THE SECTION of "Records and Information" following the last chapter of this yearbook contains a list of members of the Department of Elementary School Principals, and lists of local, sectional, and state organizations of principals.—*Editorial Committee.*

THE MEASUREMENT AND IMPROVEMENT OF PUPIL ADJUSTMENT

H. THOBURN RALPH

Principal, Washington School, Wauwatosa, Wisconsin

IN A SCHOOL which undertakes to facilitate the personal and social adjustment of children, the principal and teachers dare not wait to act until a boy or girl commits a serious misdemeanor. Really serious maladjustments are difficult to correct, and are costly in terms of time and human suffering. When case studies are made of individuals who have committed grave misdeeds, it is usually found that the violation in question was preceded by a series of acts having as their beginning only minor deviations from normal social behavior. The writer believes that principals and teachers can do much to prevent the more serious personality difficulties by wise handling of children whose problems of adjustment are still in the early stages. Before this can be done, however, steps must be taken to determine which children are well adjusted and which ones are not. Periodic surveys of pupil adjustment are necessary to discover what remedial measures are needed, and how much has been accomplished by the methods used during a given period of time.

The adjustment inventory—In making a survey of pupil adjustment it is necessary to have some device or scale to use as a basis. In the Washington School the "Pupil Adjustment Inventory," devised by Torgerson,[1] has been used for this purpose. This inventory, reproduced in Figure I, helps the teacher to identify the pupils who are maladjusted, and to determine the nature and degree of their maladjustments. It briefly defines normal or desirable behavior and three levels of maladjustment for each of ten behavior traits. Desirable behavior or satisfactory adjustment is set forth in column 1, while slight maladjustment, considerable maladjustment, and very serious maladjustment are defined in columns 2, 3, and 4, respectively. The inventory is arranged on one sheet, with space at the top for the pupil's name, grade, school, observer, and date.

When each trait has been checked at the level which best describes the child, a line connecting the ten check marks may be drawn, producing a graph which is easily read. A pupil whose behavior is checked in column 1 for *all* of the ten traits is considered normally adjusted. A pupil who receives one or more checks in column 3 or 4 is rather seriously maladjusted. This pupil should be studied carefully in order

[1] See: Torgerson, T. L. *The Diagnosis and Treatment of Pupil Maladjustment.* Ann Arbor, Mich.: Edwards Brothers, 1933. Parts B and C.

that the causes of his maladjustment may be determined and, if possible, removed. It is also important that pupils checked in column 2 (slight maladjustment) be given such study and treatment as are necessary to prevent more serious difficulties.

PUPIL ADJUSTMENT INVENTORY
(T. L. TORGERSON)

PUPIL _____ GRADE _____

SCHOOL _____ OBSERVER _____ DATE _____

I. Social Attitude

1. Friendly; makes friends easily	2. Has few friends	3. Unfriendly; no intimate friends	4. Shunned by others
1. ☐	2. ☐	3. ☐	4. ☐

II. Emotional Control

1. Well poised	2. Easily irritated	3. Frequent emotional outbursts	4. Fearful; depressed
1. ☐	2. ☐	3. ☐	4. ☐

III. Nervousness

1. Calm and self-controlled	2. Uneasy; bites fingernails, etc.	3. Stammers; nervous ties; hyperactive	4. Afflicted with nervous disease
1. ☐	2. ☐	3. ☐	4. ☐

IV. Day Dreaming

1. Responsive and alert in school	2. Generally alert	3. Seldom alert to school tasks	4. Withdraws to world of phantasy
1. ☐	2. ☐	3. ☐	4. ☐

V. Responsibility

1. Responsible	2. Frequently irresponsible	3. Assumes responsibility unwillingly	4. Irresponsible
1. ☐	2. ☐	3. ☐	4. ☐

VI. Interest

1. Spontaneous interest in work	2. Procrastinates	3. Interested only in school activity	4. Slight interest in any subject or school activity
1. ☐	2. ☐	3. ☐	4. ☐

VII. Laziness

1. Industrious	2. Occasionally requires motivating	3. Consistently needs motivating	4. Difficult to motivate; listless
1. ☐	2. ☐	3. ☐	4. ☐

VIII. Happiness

1. Happy	2. Frequently unhappy	3. Moody	4. Morose
1. ☐	2. ☐	3. ☐	4. ☐

IX. Conduct

1. Well-behaved	2. Frequently annoys other pupils	3. Impudent; quarrelsome; domineering	4. Cruel; bullies other pupils
1. ☐	2. ☐	3. ☐	4. ☐

X. Success in School

1. Passing in all subjects	2. Failing in one subject	3. Failing in two subjects	4. Failing in most subjects
1. ☐	2. ☐	3. ☐	4. ☐

FIGURE I—FORM USED FOR SURVEYING PUPIL ADJUSTMENT

The adjustment inventory should not be used until the teacher is thoroly familiar with the behavior traits of her pupils. Moreover, the rater should avoid letting her *general* impression of a pupil's adjustment or maladjustment influence her checking of the *specific* traits listed. It will be noted that the rating form itself does not use the terms "adjustment" or "maladjustment" with reference to any of the traits or symptoms described. The rater is supposed to indicate merely the types of behavior exhibited by the child.

A two-year study of pupil adjustment—Tables 1 and 2 present the results of adjustment surveys in Grades I to VI of the Washington School in 1934 and in 1936. Table 1 contains two sets of data for each behavior trait: (1) the percent of all pupils showing some degree of maladjustment; and (2) the percent of all pupils showing serious maladjustment. On the whole, these data indicate a considerable reduction in the maladjustments of pupils during the two-year period.

TABLE 1—PERCENT OF PUPILS SHOWING SYMPTOMS OF MALADJUSTMENT WITH RESPECT TO CERTAIN TRAITS IN 1934 AND IN 1936

BEHAVIOR TRAITS	SOME DEGREE OF MALADJUSTMENT[a]				SERIOUS MALADJUSTMENT[b]			
	1934[c]		1936[c]		1934[c]		1936[c]	
	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Social attitude	74.9	1	25.2	6	30.7	1	3.4	9
2. Emotional control	30.3	7	24.4	7	15.5	3	8.9	3
3. Nervousness	37.5	4	33.3	5	9.2	6	7.7	4
4. Day-dreaming	52.6	2	51.3	1	9.8	5	10.7	1
5. Responsibility	35.7	6	35.5	3	6.7	7	5.7	6.5
6. Interest	36.8	5	33.9	4	16.6	2	7.1	5
7. Laziness	51.1	3	42.0	2	15.1	4	9.9	2
8. Happiness	....[d]	....[d]	13.9	10	....[d]	....[d]	5.7	6.5
9. Conduct	24.6	8	20.0	8	3.7	9	2.2	10
10. Achievement	21.0	9	14.8	9	6.5	8	3.8	8

Read table: Of the 580 pupils in the school in 1934, 74.9 percent showed some degree of maladjustment with respect to "social attitude," while in 1936 only 25.2 percent showed some maladjustment with respect to this trait. In 1934 "social attitude" ranked first among all the traits in the percent of pupils showing some maladjustment, while in 1936 it ranked sixth in this respect.

In 1934, 30.7 percent of the pupils were *seriously* maladjusted with respect to "social attitude," while the corresponding percent in 1936 was only 3.4. This trait dropped from first to ninth rank in the percent of pupils showing serious maladjustment.

Similarly read figures for the other traits listed in column 1.

[a] Includes, for each trait, all pupils who were checked at levels 2, 3, and 4 on the "Pupil Adjustment Inventory" shown in Figure I.

[b] Includes, for each trait, only those pupils who were checked at levels 3 and 4 on the "Pupil Adjustment Inventory" shown in Figure I.

[c] The total number of pupils in the school was 580 in 1934, and 536 in 1936.

[d] The trait "happiness" was not included in the inventory until 1936.

The most pronounced change occurred in social attitude, where the percent of pupils maladjusted in any degree dropped from 75 to 25, and the percent seriously maladjusted decreased from 31 to 3. Appreciable improvements were evident also with respect to emotional control, interest in work, laziness, nervousness, general conduct, and school achievement. Little or no improvement was noted in day-dreaming or responsibility. No comparison is possible with respect to happiness because that trait was not included in the inventory in 1934. In general, the relative decrease in *serious* maladjustments appeared to be greater than the relative decrease in *all* maladjustments.

These results may have been due partly to a tendency on the part of the teachers to rate pupils more leniently in 1936 than in 1934. However, with the exception of two teachers, the rating was done by the same teachers in both years. Each teacher rated a different group of pupils in each year.

Table 2 shows the number and percent of pupils who were well adjusted with respect to all traits, and the number and percent who were maladjusted in at least one trait, in 1934 and in 1936. Group A, the well-adjusted group, increased from 15 percent to 31 percent of all pupils in the school. Group B, including all who appeared to be maladjusted in any degree, decreased from 85 percent to 69 percent of all pupils. Group C, containing only those who were rated as considerably or very seriously maladjusted, decreased from 47 percent to 27 percent

TABLE 2—SUMMARY OF PUPIL ADJUSTMENT IN 1934 AND 1936

GROUPS[a]	1934[b]		1936[b]	
	Number	Percent	Number	Percent
(1)	(2)	(3)	(4)	(5)
Group A—Well-adjusted pupils (checked at level 1 in all traits)	89	15.3	166	30.9
Group B—Maladjusted pupils (having at least one trait checked at level 2, 3, or 4)	491	84.7	370	69.1
Group C—Seriously maladjusted pupils (having at least one trait checked at level 3 or 4)	271	46.7	145	27.1

Read table: Of the 580 pupils in the school in 1934, 89 or 15.3 percent were well adjusted with respect to all traits; 491 or 84.7 percent were maladjusted to some extent in at least one trait; and 271 or 46.7 percent were *seriously* maladjusted in at least one trait. Similarly read figures for the year 1936.

[a] Based on the results of ratings on the "Pupil Adjustment Inventory" shown in Figure I.

[b] The total number of pupils in the school was 580 in 1934, and 536 in 1936.

of the school population. Again the relative improvement appeared to be greatest in the case of the seriously maladjusted children.

Possible cause of improved adjustment—While it is helpful to know that pupil adjustment improved during the two-year period, it is even more important to inquire into the causes of that improvement. This is a difficult question to answer. So many factors contribute to personality development that the relative contribution of each cannot be determined with precision. Moreover, causes vary greatly according to the nature of the individual case. The writer does not believe, however, that the personality changes described above were entirely fortuitous. He believes that they were due in some measure to a combination of elements in the school's program of personality guidance. Following are some of the steps that have been taken to help children as a result of the 1934 survey:

1. An effort has been made to improve teacher-pupil relationships. The study and discussion of pupil adjustment has helped crystallize among the faculty a feeling of friendliness, an understanding and a more sympathetic and tolerant attitude which is favorable to a happier relationship between teachers and pupils.
2. Teachers have become more alert and more skilful in discovering causes of maladjustment in children.
3. The health of the pupils has been watched more carefully than ever before. A few pupils have attended school only half days until nervous conditions were improved.
4. Home visits have increased. Thru this closer contact, parents and teachers have worked toward the same educational objectives.
5. The parent-teacher association has been active in circulating pertinent magazines and other valuable reading material among parents.
6. Special help has been given to pupils with reading difficulties. Diagnostic tests have been given to determine specific deficiencies and to aid in selecting material for remedial work.
7. Careful selection of children for admission to the first grade has helped to prevent maladjustment resulting from failure to learn to read within a reasonable time.
8. Materials of instruction have been selected more carefully than before. Teachers have aimed to use interesting material written at the reading level of the pupils.
9. Leadership has been developed in the physical education or game periods. The "squad leader" system is used.
10. Special recreational opportunities have been provided for children after school hours and on Saturdays.
11. Tests of intelligence, achievement, and personality adjustment, together with conferences and observation, have helped to determine the nature, extent, and causes of existing maladjustments.
12. Doctors, nurses, social workers, and psychiatrists have been asked to help in diagnosing pupil difficulties and in planning remedial treatment for them.

The appropriate procedures for the correction of maladjustments in pupils vary as each case is analyzed. There are many ways of helping individuals to readjust themselves so that they may live normal, happy

lives, and the Washington School tries to utilize as many of these methods as possible.

Conclusion—Schools cannot excuse themselves from their share of responsibility for the personality development of boys and girls. As this responsibility grows, the need for professional study increases. Thru professional study the entire program of the school can be made to contribute to better pupil adjustment.

It is the duty of each teacher to plan the instruction for her pupils. Courses of study and suggestions from supervisors are helpful in the selection of content material, but the adaptation of this material to the needs of the individual pupil is the teacher's task. In order to know these needs the teacher must be thoroly acquainted with her pupils in every possible way. The adjustment inventory helps the teacher to obtain systematic knowledge of her pupils at an early date and to plan for their development.

The need for permanent and cumulative records is now generally accepted. Where these are available, conscientious teachers will go to the files to study valuable data, and will be ready to help pupils much earlier than if such records had not been kept. A pupil may be satisfactorily adjusted for a number of years and then begin to show symptoms of maladjustment. A study of the inventory records helps the teacher to determine when behavior changes have occurred, and thus makes it easier for her to locate the causes.

A regular survey of adjustment keeps the teachers and the principal informed as to the amount of adjustment and maladjustment in the school. It also points out the symptoms needing attention and the specific pupils needing aid. While the adjustment inventory described in this article is by no means a perfect instrument for measuring pupil adjustment, it will, if used cautiously by competent and well-informed teachers, yield information of great value for the study and guidance of children.

CONSTRUCTING AND USING A MEASURE OF GOOD MANNERS

MORRIS B. GINSBURG

Principal, Adaire-Chandler School, Philadelphia, Pennsylvania

THIS ARTICLE is based on an attempt to evaluate a "good manners" campaign, which was undertaken as part of a year's supervisory program. In the main, however, the discussion is limited to a justification for, and a description of, the construction of the measuring device used. Only such reference to the campaign itself will be made as is necessary to explain the part which measurement played in it. In this distribution of emphasis there is no reflection of relative importance, but merely a concentration of attention on the technics by which the construction of a measuring instrument became the focus for an entire supervisory project.

Relating the project to pupil needs—Annually there is selected for supervisory emphasis in the Philadelphia Public Schools some phase of educational activity. For the year 1936-37 this topic was "good manners." The following is quoted from the superintendent's letter announcing the project:

> The term "good manners" has been chosen in preference to "courtesy" or "politeness," as the expression is probably more meaningful to the children and will make more general appeal to various groups of pupils. . . . Essentially, good manners are a phase of character education. They are based primarily upon consideration for others and upon the ability to put oneself in another's place. In addition to these basic considerations, however, there is also the problem of acquainting children with certain social conventions suited to their respective ages and social situations.

Any attempt by a school to give more than mere lip service to the development of good manners requires some judgment as to the relation of the general topic to the specific needs of that school. The superintendent put it thus: "Work in this field will have to be highly individualized and socialized. . . . The school should study its own situation, particularly with a view to analyzing the present 'courtesy level' of its pupilage." In other words, the school must identify itself with the project.

In such a situation a principal could, by fiat, set up the entire supervisory project for his school, relying on his own judgment of the needs of the school. This judgment might range all the way from the most subjective, based on cumulative subconscious impressions, to the most objective, based entirely upon tests and controlled observation. It would, however, be the judgment of only one person in the school. If the law of the "felt need" is to operate here, the opinions of teachers and

pupils are equally necessary for success. The identification of principal, teachers, and pupils with such a project can be reached thru cooperative activities whose purpose is to reveal the present status of the pupils and their subsequent needs.

Cooperative determination of goals—Every survey of status and needs implies the acceptance of certain goals. Determining where we are is a process of measuring the present situation against a set of criteria. These criteria are, in turn, dependent upon the goals we have consciously or unconsciously set up. If we change the desirable ends, there will be a consequent revamping of the factors to be observed. We tend to see in any situation the presence or absence of what we are looking for, and to ignore other manifestations no matter how significant they may be. Obviously, if the felt need is to be a common need, the principal must enlist the cooperative endeavor of teachers and pupils in setting up the goals.

As an initial step in the "good manners" project, the teacher and pupils were asked to submit instances of action contrary to good manners which they had observed during the term. These reports were called for at the close of June 1936. No limitation was placed on the number of reports submitted by any one person, but pupils below the third grade were not included because they were unable to write out reports. After combining variously described situations which were essentially the same, and throwing out those noted by fewer than 10 percent of the reporters, the bulky list was reduced to manageable proportions, as follows:

1. Pushing ahead of others in line, etc.
2. Not flushing toilets
3. Loud, harsh, or unpleasant voices
4. Walking in front of others and not saying "excuse me"
5. Running in the halls or on stairways
6. Defacing property
7. Obstructing the view of others in assembly
8. Laughing at others' mistakes
9. Taking advantage when the teacher is occupied elsewhere
10. Teasing others about their handicaps
11. Playing dangerously in the yard
12. Boys not lifting hats when meeting ladies
13. Choosing the best when materials are distributed
14. Saying "huh?" or nodding the head when questioned
15. Chewing gum in the classroom
16. Interrupting the conversation of others
17. Playing with water at the drinking fountain
18. Failing to say "excuse me" after unintentional discourtesy
19. Pouting or sulking after correction
20. Walking noisily in rooms or halls
21. Not looking at the person to whom one is speaking
22. Taking choicest seats in assembly
23. Not using handkerchief when necessary

24. Being untidy in dress
25. Untidy in use of cloakroom
26. Unclean hands, face, or body
27. Not neat in use of desk
28. Not neat in yard
29. Using improper language
30. Slouching in seat or at desk when called upon
31. Distracting attention by playing with pencil, pen, etc.
32. Disobeying the safety patrol
33. Neglecting necessary notes for absence, lateness, etc.
34. Taking advantage of permission to leave
35. Not speaking distinctly
36. Not saying "please" or "thank you" at proper time
37. Refusing to share play materials.

A quantitative survey of manners in the school—We now had a qualitative analysis of our field of activity; we knew with what "manners situations" we had to deal. However, several important questions, the answers to which were vital to efficient procedure, remained unanswered. Which situations were the most numerous and which were the least numerous? Which ones showed a fairly constant frequency thruout the grades? Which increased in number as the pupils grew older, and which diminished? Which seemed equally obvious to teachers and pupils? Which were noticed by one group and ignored by the other? What would a quantitative analysis reveal?

An inventory form was mimeographed and distributed to each teacher, and to two pupils in each classroom in Grades III, IV, V, and VI. These pupils, a boy and a girl in each room, were those in whose judgment the teacher could place greatest reliance. The inventory form listed the manners situations as given above, and provided space for noting the frequency of occurrence of each. It designated certain periods during which the teachers were to make observations, and others during which the pupils were to observe. The pupil observers were not notified of their appointment until the teachers' observations had been recorded, and neither teachers nor pupils discussed the project with other pupils until all the records were in the principal's office. We felt that we had assured natural behavior on the part of those under observation.

The facts thus gathered were summarized under headings corresponding to the following groups of judges:

1. Pupils in Grades III and IV
2. Pupils in Grades V and VI
3. Teachers in Grades I and II
4. Teachers in Grades III and IV
5. Teachers in Grades V and VI
6. Boys in Grades III, IV, V, and VI
7. Girls in Grades III, IV, V, and VI.

Since the number of observers differed from group to group, the results had to be reduced to a percentage or rank basis for purposes of comparison. In Table 1 the rank basis is used. Only the ranks of the twenty most frequent items of behavior are given in this table. The behavior occurring most frequently is ranked 1, and that occurring least frequently, 20; except that where two or more items have the same frequency, each is given the average of the ranks which they would otherwise have. For all groups of judges, the twentieth rank represents less than one occurrence per observer, on the average.

To assist teachers in interpreting these results, a chart was prepared showing them graphically. The following questions were appended to the chart:

1. Are there wide variations in the findings when pupils' reports are compared with those of teachers? Are there cases in which what seems important to the teacher is ignored by the pupils, or vice versa? Ought we not be building a *common viewpoint? How else can we determine what factors to stress?*
2. Is there progress in the elimination of some situations from Grade I to VI? Is this accidental, or is it the result of natural growth or of conscious effort? Will we make more progress if we concentrate our efforts at the points where they are most needed? *Ought we not "put the grease where the squeak is"?*
3. Is there retrogression in some situations? Is there a point where this *incidence* becomes critical? Is this not the point at which special watchfulness and special stress are needed? *Ought we not grade our expectations and requirements?*
4. Are the situations which rank consistently low, or which are not observed at all, really those which never or rarely occur, or are we merely unconscious of them? Is not this a matter of standards? Are we accepting some reaction because of an attitude of "You can't expect any better"? Is this attitude justified? *Are the highest ideals in good manners too high?*[1]

Obviously, such an approach was entirely too mature for the pupils. For their benefit, a simple bar graph showing the combined frequencies was mimeographed, and a copy was posted in each classroom. This graph was made the center for discussion and activity with reference to good manners in the room.

A program for encouraging good manners—The teachers were asked to bring their reactions to the next faculty meeting for a pooling of views. At this meeting there was general agreement that a committee should draw up a plan for the school, and that this plan should include:

1. The designation, for each month, of a core of manners situations to receive special attention
2. The grade or grades where attention should be given to each manners situation
3. Provision for flexibility so that the teacher could adapt the program to the particular needs of her classroom.

[1] The writer has found that such questions are unusually effective in directing thinking about any graphic presentation of facts.

TABLE 1—RESULTS OF MANNERS INVENTORY IN OCTOBER 1936

ITEMS OF BEHAVIOR	RANK OF BEHAVIOR ITEMS ACCORDING TO FREQUENCY AS OBSERVED BY					
	ALL OBSERVERS COMBINED	TEACHERS			PUPILS	
		Grades I and II	Grades III and IV	Grades V and VI	Grades III and IV	Grades V and VI
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Taking advantage when teacher is occupied	1	8.5	2	2	1	5
Distracting attention by playing with pencil, etc.	2	2	1	1	7.5	9
Pushing ahead of others	3	5.5	4	16	2	1
Loud, harsh, unpleasant voices	4	17.5	8.5	5.5	3	2
Chewing gum in the classroom	5	17.5	14	3	11.5	3.5
Slouching in seat when called upon	6	3	3	4	.....	15
Walking noisily in rooms or halls	7	8.5	6	17	9	3.5
Running in halls or on stairs	8	11.5	6	19	5.5	12.5
Interrupting others' conversation	9	1	11.5	8.5	15	.....
Walking in front of others	10.5	.....	15.5	11	4	19.5
Not looking at person speaking	10.5	7	6	5.5	.....	12.5
Saying "huh" or nodding when spoken to	12	4	18	11	17	.....
Picking the best when materials are distributed	13	.....	15.5	14.5	10	10
Not flushing toilets	14	.....	.....	.....	7.5	8
Playing dangerously in the yard	15	.....	18	.....	5.5	15
Untidy in dress	16	10	8.5	11	.....	15
Not using the handkerchief when necessary	17	5.5	.....	19	15	18
Untidy use of desk	18	13.5	11.5	7	.....	.....
Laughing at others' mistakes	19.5	13.5	.....	13	.....	11
Not saying "please" or "thank you"	19.5	17.5	11.5	19	.....	19.5
Teasing others about handicaps	.....	.....	.....	.....	13	.....
Not saying "excuse me" after discourtesy	.....	17.5	20	.....	.....	.....
Choosing the most desirable seats in assembly	.....	.....	.....	.....	19	6.5
Unclean hands, face, or body	.....	11.5	18	14.5	.....	.....
Untidy use of cloakroom	.....	17.5	.....	.....	15	.....
Untidy in the yard	.....	.....	.....	.....	11.5	.....
Improper language	.....	.....	.....	.....	.....	6.5
Disobeying the safety patrol	.....	.....	.....	.....	19	17
Neglecting necessary notes for absence, etc.	.....	17.5	.....	.....	.....	.....
Not speaking distinctly	.....	.....	11.5	8.5	.....	.....
Refusing to share play materials	.....	.....	.....	.....	19	.....

Read table: The item "Taking advantage when teacher is occupied" occurred more frequently than any other listed, according to the combined reports of all observers; it was given a rank of 8.5 by the teachers in Grades I-II, of 2 by the teachers in Grades III-IV and V-VI, of 1 by the pupils in Grades III-IV, and of 5 by the pupils in Grades V-VI. Similarly read figures for each of the other items listed in column 1.

The program developed to meet these specifications was as follows:

GOOD MANNERS TO BE EMPHASIZED DURING 1936-37

As a result of our inventory of manners situations, the following are selected for emphasis with a view to substituting the acceptable response. Teachers should feel free to modify the program to suit the special needs of their classrooms at any particular period.

Month	*Manners Situation Needing Correction*	*Emphasize in Grade*		
		I–II	*III–IV*	*V–VI*
November–December	Interrupting the conversation of others	x		
	Running in the halls or on stairways		x	
	Loud, harsh, or unpleasant voices			x
	Saying "huh," nodding the head, etc.	x		
	Not using handkerchief when necessary	x		
	Walking noisily thru halls, etc.		x	
	Not neat in use of the desk			x
	Pushing ahead of others in line, etc.	x	x	
	Taking advantage when teacher is occupied elsewhere		x	x
	Distracting attention by playing with pencils, pens, clothing	x	x	x
	Slouching in seat or when called on to speak	x	x	x
	Not looking at person with whom one is speaking	x	x	x
January	Taking advantage when teacher is occupied elsewhere	x		
	Walking noisily thru halls or in room	x		
	Unclean hands, face, body	x		
	Running in the halls or on stairways	x		
	Loud, harsh, or unpleasant voices		x	
	Not saying "please" or "thank you"		x	
	Not neat in use of the desk	x	x	
	Laughing at others' mistakes	x		x
	Untidy in dress		x	x
	Interrupting the conversation of others		x	x
	Not speaking distinctly		x	x
	Walking in front of others and not saying "excuse me"			x
	Saying "huh," nodding the head, etc.			x
February	Reemphasize those items above which need more attention; add others.			
March	Loud, harsh, or unpleasant voices	x		
	Not saying "excuse me" after discourtesy	x		
	Untidy use of the cloakroom	x		
	Neglecting necessary notes for absence, etc.	x		
	Taking advantage of permission to leave the room	x		
	Walking in front of others without saying "excuse me"		x	
	Playing dangerously in the yard		x	
	Unclean face, hands, or body			x
	Pushing ahead of others in line, etc.			x

Month	Manners Situation Needing Correction	Emphasize in Grade I–II	III–IV	V–VI
	Walking noisily in halls or room			x
	Chewing gum in the classroom	x	x	
	Picking the best when materials are distributed		x	x
April	Walking in front of others without saying "excuse me"	x		
	Defacing property	x		
	Picking the best when materials are distributed	x		
	Saying "huh," nodding the head, etc		x	
	Unclean hands, face, or body		x	
	Not saying "excuse me" after discourtesy		x	
	Running in the halls or on stairways			x
	Not using handkerchief when necessary			x
	Not saying "please" or "thank you"	x		x
May	See *February*.			
June	Reinventory and plan emphasis for the duration of this term and next.			

The forward-looking teacher will, of course, endeavor to lead her pupils to make this program their own. The principles on which she bases her activities will be essentially those which guided the writer in the activities described above. But the teacher will need to adjust her technics to the maturity of her pupils and to the interests they have developed.

Conclusion—A partial measure of our success should be available at the close of the year. A reinventory at that time should reveal whether or not there has been significant improvement in the behavior stressed. However, since any gain revealed at the close of the campaign may be lost as soon as the pressure of the campaign is removed, it will be necessary to allow a term or a year of normal emphasis to elapse, and then to take a third inventory. The results, when compared with the findings of the previous inventories, will show how much of the initial gain has been retained, and where reemphasis is needed.

Any attempt to reduce to a quantitative basis an intangible such as good manners is fraught with the danger of mechanization. The writer believes that the *desire* to measure such behavior is in itself insufficient justification for undertaking an activity of this kind. When, however, it becomes possible thru the planning and use of a measuring device, to lead teachers and pupils to identify themselves with the school's program, and to identify this with the city program, lack of warrant cannot

be claimed. In such a scheme measurement has its proper place. A supervisory program needs to be trestled upon something more substantial than the subjective determination, by any single individual, of the immediate needs, the subsequent progress, and the ultimate goals of the school.

IT IS SAFE TO SAY that there is no definable aspect of character or personality which could not be measured by expert persons, given reasonable time and funds, with reliability equal to or superior to the better classroom tests in particular subject-matter fields. No one conducting any research in which character outcomes are important can excuse failure to measure them by the assumption that such measurement is impossible. . . .

There is very little hope of magic touchstones for character. It looks very much as though results were going to be dependent upon extensive, expensive, and long-continued thoroughness in observing and recording human behavior. The school program made up of whatever is easiest to do will have little immediate place for character measurements. The school program centered about what is most important to do will very probably lead to another conclusion.—*Character Education,* Tenth Yearbook, Department of Superintendence, 1932, p. 348, 404.

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CHAPTER VIII

ESTIMATING THE EFFICIENCY OF TEACHERS

EDITORIAL COMMENT

UNTIL RECENTLY, teacher rating was associated primarily with the retention and promotion of teachers. During the past decade, however, there has been a growing interest in the measurement of teaching ability as a means of improving instruction. While most administrators would probably agree that such measurement cannot yet be used safely in determining teachers' salaries, few would contend that it cannot contribute to the improvement of teaching service.

Ideally, the efficiency of teachers should be judged according to the results which they obtain with pupils. It is extremely difficult, however, to determine the extent to which pupil achievement is due to the teacher rather than to other influences. For this reason most appraisals of teaching success have focused attention on the personality, professional knowledge, and classroom methods of the teacher. Either of these two approaches, when used alone, is likely to lead to serious error. Both approaches seem necessary if reasonably valid judgments are to be reached.

Fortunately, the improvement of instruction does not require a fine discrimination between the abilities of different teachers. It is sufficient if the principal or supervisor, in cooperation with the individual teacher, can discover the points of strength and weakness in the latter's personality and methods of teaching, and can use this knowledge to foster teacher growth. This process, of course, should utilize any special technics which will facilitate the discovery of pertinent facts about the teacher and her work.

The two contributors to this brief chapter offer no ready-made solution to the problem of teacher rating. In the first article, Shannon reviews the methods which have been used in this field. In the light of research findings and the opinions of educational authorities, he concludes (1) that a combination of methods is essential, and (2) that much additional research must be conducted before a truly scientific appraisal is achieved. The second article, by Bush, describes the application of certain methods in actual school situations. The author proposes criteria for judging instruction in several areas.

Further information on the problems and possibilities of estimating teacher efficiency may be found in the references listed on page 537.—*Editorial Committee.*

DIFFICULTIES IN ESTIMATING THE EFFICIENCY OF TEACHERS

J. R. SHANNON

Professor of Education, Indiana State Teachers College, Terre Haute, Indiana

TO HOPE TO MEASURE EFFICIENCY in teaching with exactitude is to chase a rainbow. Precise measurement of teaching efficiency is a limit which may be approached but probably never will be attained. Before such measurement can be achieved, we must know what each individual child should be taught, what standards each child should attain, how all teaching should be done by each teacher with each pupil, and how achievement in all fields of learning can be measured. At present none of these things is known with certainty, altho tentative standards have been formulated with respect to many aspects of them. Our gradual growth in knowledge of these things will undoubtedly enable the variable of success in measuring teacher efficiency to approach its limit more closely. This article reviews the principal methods of teacher measurement which have been used or suggested thus far, and discusses their limitations for practical school use.

Ways of measuring teacher efficiency directly—The direct means for measuring efficiency in teaching fall into two general categories: (1) the measurement of teaching procedures, and (2) the measurement of teaching results. A number of particular proposals have been made, but all which purport to measure teaching merit directly are applications of one or the other or both of these two general types. For example, Stevens[1] has shown how the teacher's questions can be used as a measure of efficiency in instruction. Her idea clearly falls under the heading of measuring teaching procedures. Numerous score-cards have been devised to measure teachers and teaching. These include both items of procedure and items of results. They usually include also a limited number of general qualities, such as the personal traits and professional training of the teacher, that are only indirectly valuable in measuring teaching. These qualities in themselves have little significance; it is only as they are manifested in classroom procedures or results that they become potent factors in teaching success.

Thus, whether estimates of teaching success are made by pupils, by supervisors, or by parents, they are arrived at either consciously or unconsciously thru one or the other (or both) of the two approaches just mentioned. Various impeding factors, however, prevent each of these methods or any combination of them from being fully satisfactory.

[1] Stevens, Romiett. *The Question as a Measure of Efficiency in Instruction.* Contributions to Education, No. 48. New York: Teachers College, Columbia University, 1912.

Difficulties in judging teaching procedures—Perhaps the chief difficulty in measuring teaching efficiency thru judging teaching procedures is that there is no *one* best way to teach. Both common observation and competent authority support this conclusion.[2] The teaching act cannot be reduced to a formula. That which is good teaching in one situation or with one pupil may not be appropriate in another situation or with another pupil. With a variety of individual needs among the members of a class, a given teaching act may at the same time be both good and bad. Also, some teachers may find certain procedures successful while other teachers find them ineffective.

A more obvious difficulty is the unreliability of judging teaching procedures. Those doing the rating are themselves erratic in their judgments; they often do not know enough about teaching procedures; and they are prone to confuse the issues involved. That one critic frequently will call a teaching performance good which another will call poor is too patent to necessitate further argument.

Arguments for judging teachers by results—Those who disapprove of using teaching procedures as the basis for measuring teacher efficiency are often inclined more favorably toward the measurement of results. This point of view is expressed emphatically by Sharp, who declares that the teacher

> should be allowed great freedom to work out his own policies. Ignorant school boards and fussy superintendents can easily spoil a good man's work, or drive him out of the field, and indeed out of the profession. Even if he is willing, or is compelled to stay, interference on the part of others will hamper him, for he can do his best only by methods which he approves. He should therefore be held responsible solely for results.[3]

A statement perhaps even more impressive is the following:

> It is the teacher's task to make changes for the better in the abilities, habits, and attitudes of the boys and girls. Her efficiency can be evaluated fairly only in terms of her success at this task. In other words, if a teacher is rated at all, she should be rated, not by the clothes she wears, or the method she chooses, but by the results she secures.[4]

Other writers have expressed similar views. Among them are Barr and Burton, who say, "The final test of efficiency is to be found in the amount and quality of service rendered—in the actual output of work." [5] In discussing teacher rating, however, the same authors say:

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[2] See: Hudelson, Earl. "Experimental Supervision." *Educational Supervision.* First Yearbook of the National Conference of Educational Method. New York: Teachers College, Columbia University, 1928. Chapter XV, p. 208-15. ¶ Monroe, Walter S. *Directing Learning in the High School.* Garden City, New York: Doubleday, Page and Co., 1927. p. 89.

[3] Sharp, Frank C. *Education for Character.* Indianapolis, Ind.: Bobbs-Merrill Co., 1917. p. 21-22.

[4] Connor, William L. "A New Method of Rating Teachers." *Journal of Educational Research* 1: 338-58; May 1920.

[5] Barr, A. S., and Burton, William H. *The Supervision of Instruction.* New York: D. Appleton Co., 1926. p. 323.

Just because human judgment is fallible is no reason to do away with procedures which rest upon judgment. We have to rely upon that same fallible judgment in many vitally important affairs in life. We base courses of action affecting the welfare of many people upon it. Likewise rating which affects the welfare of teachers may be based upon carefully controlled judgment. In the absence of objective methods and data, it is not only legitimate to rely upon controlled subjective methods; it is the only recourse.[6]

Difficulties in evaluating results of teaching—Altho there is a heavy demand for evaluating teaching merit on the basis of results instead of on the basis of procedures, to do so is to jump from the frying pan into the fire. Even more serious and difficult obstacles are encountered in this area. Two of the most obvious objections to measuring teacher efficiency on the basis of pupil accomplishment are (1) that we are unable to isolate all the things to be measured, and (2) that numerous aspects of pupil development cannot yet be measured at all. These objections are effectively stated by Gast and Skinner, as follows:

We are not justified in basing promotions of teachers on their degree of success in getting classes up to an efficiency of 100. The validity of our tests is too uncertain, and the pupils' scores are influenced by too many factors to justify any such procedure. Moreover, . . . teachers will work to get results of this more formal and measurable sort, and thus neglect the more important and more intangible marginal outcomes such as habits, attitudes, ideals, appreciations, and sentiments.[7]

Similar views are expressed by Wrinkle and Armentrout, who say:

If the success of the teacher is to be measured in terms of such objectively determined progress of students, the teacher who is interested in attaining such success is likely to emphasize those things most likely to be involved in the achievement tests. . . . By no means is such achievement the most important outcome of education. . . . The progress and achievement of students who have been working under the direction of a teacher . . . cannot be accepted as a sole or even major factor in determining teaching success until it is possible to measure student progress and achievement in ways other than in terms of knowledge and skill required.[8]

Other objections to rating teachers on the basis of pupil achievement are the low correlations found between the acquisition and the retention of knowledge, and between the acquisition of knowledge and its use in later life.[9] Also, we are warned to guard against the over-use of tests because of their possible conflict with the mental hygiene of the child and of the teacher.[10]

[6] *Ibid.*, p. 459. See also: Courtis, Stuart A. "Standards of Teaching Ability." *Educational Review* 62: 183-86; October 1921.

[7] Gast, Ira M., and Skinner, Harley C. *Fundamentals of Educational Psychology.* Chicago: Benjamin H. Sanborn Co., 1929. p. 67-68.

[8] Wrinkle, William L., and Armentrout, Winfield D. *Directed Observation and Teaching in Secondary Schools.* New York: Macmillan Co., 1932. p. 351-52.

[9] Lancelot, William H. "Standards of Measurement of Teaching Ability." *School and Society* 34: 236-38; August 15, 1931.

[10] Myers, Garry C. "Schoolroom Hazards to the Mental Health of Children." *Mental Hygiene* 12: 18-24; January 1928.

Combining the two methods—With only two means for directly measuring efficiency in teaching, both of which possess demonstrable weaknesses, some combination of the two probably should be used until something better can be devised. The two means are complementary. To measure results without keeping teaching procedures uniform provides no real measure of teaching efficiency, for we cannot tell what the results might be if all teachers measured followed the same procedures. To measure procedures only and ignore results is likewise unsatisfactory. Both types of appraisal are needed.

If a given procedure is sound, then skill in its use should correlate highly with final results, provided that physical conditions in the classroom, traits of the teachers, and other influential factors are constant. However, since these factors cannot be kept constant, and since there is no reliable measure of skill in using the teaching procedures, correlations between estimates of teachers' ability and the test scores of their pupils have been low.[11] It is probably justifiable, therefore, to propose that attention be focused largely on teaching procedures, and that measurable results of instruction be considered also as a gross check on the functioning of these procedures. Such a combination, in the writer's judgment, will form as satisfactory a scheme as can be hoped for at present. "The worth of the teacher can be estimated only by a careful study of the actual teaching performance, and by accurate measurement of the attainments of the pupils *which can be accounted for in terms of the teacher's work.*" [12]

In connection with the proposal just made, two further considerations should be borne in mind. First, the measuring of classroom procedure must be done by means of a more analytical device than most of the so-called score-cards now in circulation. The latter give too gross a picture of the teaching process. Most of them do not tell the whole story. Too many significant elements are omitted, and regardless of how well or how poorly a teacher may perform in respects not covered by the score-card, her "score" remains unaffected thereby. It is probably true that a score-card at present "can do no more than systematize the judgment of the one who uses it." [13]

The second point to be considered is the apparent tendency among educators at present to swing away from an attitude of extreme "ob-

[11] See: Crabbs, Lelah M. *Measuring Efficiency in Supervision and Teaching.* Contributions to Education, No. 175. New York: Teachers College, Columbia Universiay, 1925. 98 p. ¶ Baird, James, and Bates, Guy. "The Basis of Teacher Rating." *Educational Administration and Supervision* 15: 175-83; March 1929.

[12] Nutt, Hubert W. *The Supervision of Instruction.* Boston: Houghton Mifflin Co., 1920. p. 229. (Italics by the present writer.)

[13] Monroe, Walter S., and Weber, Oscar F. *The High School.* Garden City, New York: Doubleday, Doran and Co., 1928. p. 489.

jectivity-ness," toward a sane and carefully considered "subjectivity-ness." Two illustrations of this shift are found in the statements of Deutsch and of Engleman. Deutsch says:

> How then should we know good teachers? There is only one way—to place the decision in the hands of those who are qualified to judge—qualified by their learning, by their knowledge of what constitutes good teaching—and who, above all, have that rare power to see whether those under consideration possess the qualities and knowledge necessary.[14]

Engleman wonders "whether our pedagogical passion for objectivity may not be due quite as much to our proneness to laziness as to a penchant for the techniques of science." [15]

An indirect approach—Altho there are only two general ways of directly measuring efficiency in teaching, there are in addition certain indirect means. One of these which has been advocated in recent years is the measurement of pupil attention.[16] The assumptions back of this device seem to be (1) that good teaching will hold pupils' attention while poor teaching will not; (2) that if pupils remain attentive, definite and valuable learnings are bound to result; and (3) that pupil attention can be measured with a relatively high degree of reliability. There are serious limitations, however, which make the use of this device unsatisfactory as a measure of teaching success. Blume, himself an advocate of the technic, deprecates its value for this purpose by saying, "The supervisor who uses the scores as a rating device is as grossly negligent of his duty as he would be were he to use a standard test in arithmetic for the same purpose." [17]

An experiment by the present writer [18] showed that altho attention scores obtained by different observers correlated closely and were therefore sufficiently reliable, their correlations with more subjective measures of teaching merit were considerably lower. At the best, attention scores give only symptoms of satisfactory or unsatisfactory conditions. Further analysis of the teaching when pupil attention is poor must be made before one can tell the cause of the inattention.

Further study needed—Much careful study will be necessary before we can expect to arrive at a scheme for measuring efficiency in teaching

[14] Deutsch, Monroe E. "How to Know Good Teachers." *School and Society* 31: 525-28; April 19, 1930.

[15] Engleman, J. O. "The Place of Objective Standards in Judging Student Teaching." *Educational Administration and Supervision* 17: 321-29; May 1931.

[16] See: Morrison, Henry C. *The Practice of Teaching in the Secondary School.* Chicago: University of Chicago Press, 1931. Chapter VIII, "Measuring Group Control," p. 121-40. ¶ Blume, Clarence E. "Techniques in the Measuring of Pupil Attention." *Scientific Method in Supervision.* Second Yearbook of the National Conference of Supervisors and Directors of Instruction. New York: Teachers College, Columbia University, 1929. Chapter III, p. 37-51.

[17] Blume, Clarence E., *op. cit.*, p. 49.

[18] Shannon, J. R. "A Comparison of Three Means for Measuring Efficiency in Teaching." *Journal of Educational Research* 29: 501-08; March 1936.

which is valid, reliable, and democratic. Many extensive researches will have to be carried on. Probably no one person or small group of persons can do the work necessary to accomplish the desired result. The ultimate solution will be reached, if ever, only by the gradual accumulation of verifiable data. School principals and supervisors can contribute to this solution by studying the problem of teacher appraisal in their own schools, and reporting the results so that others may profit from them.

ONE OF THE GREATEST OBSTACLES to the administration of rating schemes of whatever kind is the insurmountable personal factor. By the very nature of the case, judging teacher efficiency is subjective. Even if we knew all the factors that enter into teacher efficiency and had an objective measure of each personal factor, subjective judgment would not be eliminated. It is unnecessary that it should be eliminated. The essential thing is to eliminate *mere personal opinion,* to make sure that all the elements of teacher efficiency, so far as we know them, are given proper consideration and weight in the formation of the final judgment, and that every judgment be based on a sure foundation of facts and sound educational principles. —Cooke, Dennis H., *Problems of the Teaching Personnel,* Longmans, Green and Co., 1933, p. 211. (Quoted by permission of the publishers.)

METHODS OF EVALUATING THE QUALITY OF INSTRUCTION

A. S. BUSH

Principal, Woodlawn School, San Antonio, Texas

IN THIS DISCUSSION the writer is interested in the evaluation of teaching efficiency primarily from the viewpoint of the improvement of instruction, rather than from the administrative point of view. If we knew how to estimate the efficiency of teachers more justly and more scientifically, the problem of supervision would be greatly simplified and the principal's important task of training teachers in service would be easier and much better done. Because of our present limited knowledge of the true objectives of teaching, our uncertain measuring devices, and our imperfect technics for controlling irrelevant factors, even the most careful procedure yields results that are only partially reliable.

In addition to conditions within the school, there are many outside factors that tend to confuse the picture. Among these are the child's family background, the character of the community, the child's experiences with reading, travel, movies, radio, and so forth. There is the difference in the ways superior and dull children react to instruction. There is the personality of the teacher—her attitude toward life, toward her work, and toward children. All these factors affect the outcomes of classroom teaching in subtle and unpredictable but vital ways.

The difficulty and complexity of the problem, however, do not justify supervisors and principals in sidestepping the responsibility of evaluating the work of teachers. Without standards of achievement and systematic appraisal of the teaching process, the whole basis of supervision is reduced to the subjective judgment, or maybe to the personal whims, of the supervising officer. This article first discusses two practical and direct approaches to the problem: (1) critical observation of the teacher at work, and (2) measurement of pupil growth. It then describes the application of these methods in actual school situations.

OBSERVING THE TEACHER AT WORK

By critical observation is meant such intelligent, sympathetic, and professional observation of a teacher's work during a series of visits as any principal must make before he can talk constructively to her about her work. It is an insult to a teacher's integrity and intelligence, as well as a demonstration of the principal's inefficiency, to invite a teacher into conference after only one or two brief periods of observation, and to attempt to tell her about everything she is doing wrong.

The principal cannot yet even tell her what she is doing right, and commendation for effective work is a good introduction to any conference.

Direct observation of a teacher in action reveals a great deal as to the quality and outcomes of her teaching. It reveals an ease of manner born of self-confidence and a sense of mastery, or a lack of poise due to uncertainty and self-depreciation. It reveals her knowledge and organization of subjectmatter or units of work. It shows her resourcefulness or lack of it in meeting changing situations. It discloses her personality—whether attractive or repellent, inspiring or depressing, cooperative or domineering. It shows strength or weakness in planning, organizing, and directing pupil activities. It reveals the teacher's technics of approach and her procedures in teaching and in checking the outcomes of instruction. It shows her sense of values, her alertness, and her ability to follow leads. It shows up her housekeeping, the general physical condition of the classroom, and a score of other evidences of strength or weakness. Direct observation which reveals all these things seems indispensable to any valid scheme of evaluating teacher efficiency.

MEASURING PUPIL GROWTH

The growth of pupils also is a fair pragmatic test of teaching efficiency. The term "pupil growth" is used here deliberately. Growth implies much more than achievement in school subjects. It signifies all-round personality development—physical, mental, emotional, and social. It includes both individual and social maturation.

There are two ways of measuring pupil growth: (1) by alert observation of the reactions of children in the classroom and in the larger school community, and (2) by the use of standardized and informal tests.

Observing pupil behavior—Just as the observation of teacher performance helps to evaluate teaching, so does the observation of pupil behavior help to estimate teaching efficiency in terms of pupil growth. Such observation reveals the pupils' general attitudes, whether good or bad; their social attitudes, whether courteous and cooperative or boorish and selfish; their work habits, whether orderly or slovenly; their approaches to learning situations, whether direct and intelligent or indirect and bungling; their attitudes toward their work, whether alert or indifferent; and, in short, their changing adjustments to the entire school environment. A careful analysis of pupil responses to the school situation tells a revealing story of teacher efficiency or inefficiency. This process must become a part of the evaluation of teaching.

Using tests of intelligence and achievement—Some phases of pupil growth can be accurately estimated by means of objective tests. This is true of all the elementary skill subjects. Achievement tests covering

these fields are now developed to a high degree of validity and reliability. Thru their use we may know not only that a child is growing, but also something about the rate and specific nature of his growth, measured objectively. Both achievement and intelligence tests are used in determining pupil growth. However, neither the achievement score nor the intelligence quotient is in itself of highest significance. A more significant index of growth is the accomplishment ratio. The intelligence quotient indicates the pupil's relative capacity. The achievement score indicates only what he has actually accomplished. His achievement must be measured against his intelligence (as in the accomplishment ratio) before one knows whether he has achieved up to his ability.

Diagnostic achievement tests are of special service in rating teaching efficiency in the skill subjects. In this connection, the writer believes that the ordinary skills of learning—reading, writing, and arithmetic—have to be definitely and specifically *taught*. In his judgment these skills are not and never will be mere concomitant outcomes of projects, activity programs, or unit studies. They need to be analyzed into their elements and taught specifically, as indicated later in this discussion.

In other fields, such as social studies, science, literature, and citizenship, measuring rods vary greatly in accuracy. Even there, however, practically reliable evidences of growth can be obtained.

THE EVALUATING PROCESS IN OPERATION

The following paragraphs attempt to show how the plan of evaluating teaching efficiency by observing teachers and measuring pupil growth works out in actual practise. The reader will observe how closely this plan is tied into the entire school set-up—its guiding philosophy, general organization and administration, curriculum organization, methods of teaching, extracurricular activities, and supervision. From the point of view assumed in this discussion, the efficiency of teachers must be appraised with reference to all these aspects, because an efficient school is an integrated school. Descriptions of three types of school activity will illustrate the method used.

A look at school assemblies—As the first step in the development of school assemblies, the assumed values of assemblies are set up and discussed in faculty meetings. These values are listed as follows:

1. Assemblies afford occasions for organizing and dramatizing significant outcomes of classroom instruction and other vital school experiences.
2. They call into play a desirable integration of the various activities used in the development of large units of study.
3. By requiring a revival of the setting and spirit of historical episodes and other social situations, they make past and present social experiences more real to children.

4. They develop initiative and cooperation in planning and producing programs.
5. They make school life more attractive to children.
6. They widen the educational horizons of the pupil audience.
7. They serve to acquaint parents with the work and standards of the school.
8. They develop poise and self-confidence.
9. They reveal special talents, interests and aptitudes.
10. They serve to unify the school and to strengthen morale.

The second step is to set up desirable standards for the assembly program. The following desirable characteristics are indicated:

A. Negative

1. Is not teacher-dominated in planning or execution
2. Is not judged by adult standards
3. Does not strive for artistic perfection
4. Does not specialize in star exhibitions
5. Does not require elaborate costuming or staging
6. Does not utilize ready-made or second-hand patterns.

B. Positive

1. Is on the level of child life and interests
2. Is interesting in form and worthwhile in content
3. Is simple, free, and realistic
4. Is child-planned and executed. The teacher's skilful guidance is vital, but only suggestive and stimulating.
5. Satisfies the critical standards of children rather than those of adults
6. Utilizes and correlates various contributing interests and activities, such as music, art, literature, costuming, and stage setting
7. Uses in some role all the children of the class or club group
8. Is usually the outgrowth and consummation of a unit of classroom or school activity.

The third step is to make ample provision for administering the program as set up. The school assembly is scheduled for a regular time, and is supervised and administered as faithfully as any other curricular activity.

The fourth and final step is to judge teacher efficiency and pupil growth in assembly activities in the light of the objectives, standards, and procedures set up. These will change as experience and judgment may warrant.

Evaluation in content subjects—In all content subjects, such as social studies, the evaluation of teaching begins with the teacher's organization of curricular materials. We therefore begin by attempting to organize the social studies into large units. The organization of each unit is judged in accordance with the following general outline:

1. General objectives
2. Specific objectives, stated in terms of detailed outcomes to be achieved. These specific objectives reach into as wide a range of related fields as may be explored in developing the unit—history, geography, science, invention, biography, art, literature, music, and construction

3. Approach or orientation
4. Procedures in ample detail
   a. Teacher activities
   b. Pupil activities
5. Methods of checking outcomes
6. Bibliography of available reference material.

According to the maturity of the children, the nature of the unit, and the amount of detail given, units built on this plan occupy from two or three to ten or fifteen typewritten pages. In some instances an entire semester's work may be organized as a single integrated unit of study. In all cases, the main divisions of the large unit become subordinate units, which in turn are broken up into their component parts and finally into the details shown in daily lesson plans.

The psychology of this procedure includes (1) seeing a unit as a whole, (2) analyzing it into its component parts and studying the relation of these parts, and (3) reconstructing the now familiar parts into an integrated unit. In other terms, this is the well known synthesis-analysis-synthesis method of teaching. A unit of study set up by a teacher after this fashion constitutes a reliable index of her ability to think thru and organize her teaching material. Such ability is in turn one type of evidence of her teaching efficiency.

Further evidence of efficiency is found in a teacher's method of "following thru" the teaching of a unit after it has been well planned. The following outline is suggested as a tentative guide in judging the merits of the teaching procedure:

1. Approach: Based on an apparent or easily aroused interest
2. Assimilation: A prolonged period of investigation and study, involving Rugg's five-point activity program as follows:
   a. Orienting (excursions, etc.)
   b. Building (construction work and related industrial arts)
   c. Creative work (art, music, literature)
   d. Research (use of references and library in solving problems)
   e. Group discussion and conferences
3. Organization of learning into usable form
4. Testing for outcomes
5. Presentation of finished unit (exhibit of results or an assembly program).

The teacher's skill in following thru to the consummation of a unit of study is unquestionably valid evidence of her efficiency. The growth of her pupils in skills, knowledges, abilities, habits, and attitudes is also acceptable evidence of teaching efficiency so far as such growth can be attributed to the teacher's influence rather than to other factors.

Evaluation in skill subjects—In all skill subjects diagnostic testing plays an important part in the teaching process. It is, in fact, a necessary preliminary step in intelligent, economical teaching. It is mainly by means of this preliminary testing that the element of time can be cut down in teaching the three R's. Intelligent remedial instruction certainly

should follow careful diagnostic testing. No skill is most economically and efficiently taught *generally*; it is taught *specifically*.

Classroom teachers might well observe the methods of those who teach athletic skills. The latter do not attempt to teach tennis or swimming all at once by general directions. They analyze such skills into elements, teach these elements separately, and then try to coordinate the elements into a skilful, unified performance. The same principle applies to the teaching of skill in arithmetic, for example. Multiplication or subtraction is not learned economically by general practise. It is more efficiently learned by mastering, one at a time, the elements that are essential in the skilful handling of numbers.

With this principle in mind, evaluation of efficiency in teaching the skill subjects may begin by examining the accuracy with which each subject is analyzed into its elements. The teacher who does this skilfully has made a good beginning on the road to effective teaching. Next follows the diagnostic test to reveal the elements in which each pupil is strong or weak, and to locate the trouble spots in cases of weakness. Finally, when the trouble spots are isolated, specific remedies are sought and applied to cure the troubles. Insight and skill in following thru these processes are sure evidences of efficient teaching.

Description of a simple experiment in arithmetic may help to make these procedures clearer. The fundamental number operations are first analyzed and classified under certain types. Every year, usually in October, tests are given that contain one or more examples of each type. Results of these tests are carefully recorded and analyzed. Any type of error that occurs two or more times is considered a trouble spot and is explained before the class as a whole. Types of errors occurring only once may or may not indicate an element of difficulty; they are just as likely to be due to carelessness. We take no chance, however, and these errors are checked with the individuals who made them. Then for about four weeks teaching and drill are based on the types of errors revealed in the preliminary test. After this a second test is given, covering the same types of number operations. The results of the second test show the amount of improvement made during the period of specific remedial work. Definite evidence of improvement in pupil achievement during this period indicates efficiency in the use of diagnostic tests and remedial instruction.

SUMMARY

1. Evaluation of teaching is a complex process not limited to a study of what goes on in actual classroom instruction.

2. There are two practical approaches to the study of teacher efficiency: (a) observation of teacher performance, and (b) estimating pupil growth.

3. Adequate observation of a teacher's performance must take into account her personality, her philosophy of education, her attitude toward life, her attitude toward children, parents, and fellow teachers, her grasp and organization of subjectmatter, and all her technics of classroom management and instruction. Valuable insights into her traits and abilities are gained by observing the teacher at work.

4. Pupil growth may be estimated by observation and by objective tests. Such growth is reckoned in terms of individual and social adjustments as shown by the child's behavior, and in terms of scholastic achievement as shown by his performances on standardized and informal tests. Schools are organized and operated for the purpose of fostering pupil growth. The core of the school is its teaching function. Therefore, the pragmatic test of teaching efficiency is ultimately the growth of the pupils.

THERE should be close agreement between the accepted objectives of a school and the instruments which the school uses to measure its attainment of these objectives. The practise of giving standardized achievement tests containing material which the school does not intend to teach has no place in a valid program of appraisal. It is especially unfair to judge teachers or teaching methods according to pupil performances on such tests. If fundamental discrepancies exist, either the tests or the aims and content of the school curriculum should be modified. —Chapter I, p. 236 of this yearbook.

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CHAPTER IX

JUDGING SCHOOL EQUIPMENT

EDITORIAL COMMENT

AMERICAN SCHOOLS spend millions of dollars annually for textbooks, supplementary materials, mechanical and pictorial devices, classroom furniture and supplies, play equipment, and other items intended to facilitate instruction. Such materials need as careful evaluation as do other elements in the school program.

The appraisal of school equipment has two major aspects: (1) determining the inherent quality of materials in relation to their cost, and (2) determining the appropriateness and utility of materials in the educational program. The first phase usually requires laboratory facilities and technical skill which are seldom available in public school systems. While the teacher or administrator may improve his selection by checking each product against desirable specifications, he must usually rely on the manufacturer's statement as to whether the product meets these specifications. Fortunately, the statements of many manufacturers may be accepted with confidence.

The second phase of appraising school equipment—determining its usefulness in the educational program—is the one to which principals and teachers can contribute most. In undertaking such appraisal, they should not rely on personal opinion alone, but should formulate and use suitable objective measures. Checklists and score-cards are useful in certain situations. Classroom experimentation may help to determine the effect of different kinds of equipment upon pupil achievement.

This chapter deals with only two types of school equipment: textbooks and motion picture projectors. In the opening article, Averill discusses criteria for judging a textbook. He stresses the need for a more objective and analytical approach, but recommends that appraisers also consider each book as a whole. In the second article, Waterman describes a plan for selecting textbooks, including the formulation of criteria, the construction of a score-card, the analysis of different books, and the rating of books according to the results of this analysis.

The closing article, by Sigman and Garman, presents the results of a survey of two types of motion picture projector in a large city school system. The authors conclude that the narrow-width equipment is the more satisfactory for elementary schools.

In view of the limited scope of this chapter, the reader should consult the references listed on page 566.—*Editorial Committee.*

THE ANALYSIS AND SELECTION OF TEXTBOOKS

WILLIAM A. AVERILL

Instructor in Education, Lesley School, Cambridge, Massachusetts, and Lecturer, University Extension Division, Massachusetts State Department of Education, Boston, Massachusetts

THE INCREASING SUPPLY of printed materials of instruction offers to the schools an unprecedented volume and variety of basal textbooks, supplementary texts and reading books, pupils' workbooks, teachers' manuals, pupils' laboratory manuals, and other auxiliary materials for classroom use. From this bewildering wealth of publications, busy administrators and teachers must choose the particular books which, in their opinion, will best suit the needs of the children who will use them, and which will meet course-of-study requirements and other conditions imposed by the local school situation.

Difficulties of selection—The problem of textbook selection is made difficult by a number of factors, as follows:

1. The large number of publishers' offerings in every subject
2. The undeniable merits of each textbook or series of textbooks which has already met the exacting demands of a modern publishing house
3. The convincing arguments of publishers' representatives, and the ability of demonstrators to show that their books will function in the classroom
4. The time-consuming nature of any worthwhile examination of the books by committees or by individual appraisers
5. The fact that many teachers are not trained in the technics of comparative appraisal
6. The frequent relegation of this important task to after-school and evening hours
7. The large role played by subjective opinion and by preferences as well as prejudices for and against specific textbook features
8. The inadequacy of available criteria for judging the suitability of textbooks for a given subject or grade
9. Considerations of cost, personal contacts, and other factors unrelated to the respective merits of the books.

Important as each of these elements in the problem is, there is space in this article for only the partial elaboration of actual criteria for the examination and comparison of textbooks.

Types of textbook appraisal—The criteria employed by administrators and teachers will vary with the type of examination given to the books. Analysis of current practises reveals at least three kinds of examination:

1. A general perusal of the books by an individual appraiser without reference to any specific plan
2. A detailed analysis of all the quantitative aspects of the books, consisting largely of counts of pages devoted to given topics, the number of questions and problems, the number of illustrations, and other similar items
3. A study of the larger, more comprehensive, and more significant features of the books, such as their organization and content, use of effective teaching pres-

entations, provision for activity programs, suitability to particular grades, and other characteristics of each book as a whole.

Many experienced teachers, using their classroom situations, local courses of study, and knowledge of their pupils' capabilities and limitations, can decide which textbook they would prefer to place in the children's hands. A supervisor, knowing school conditions thruout the local system, may make the same sort of selection. The opinions and preferences of the teacher or supervisor may rest upon a valid foundation of practical experience and a desire to meet the needs of the children. On the other hand, a large measure of subjective opinion and prejudice may enter into appraisal of this type, and the present need is for the use of more objective criteria in textbook selection.[1]

The minute analysis of quantitative features goes to an undesirable extreme when it is made the sole basis of appraisal. A considerable amount of counting pages and items is necessary and should enter into all objective comparisons of textbooks. There is, however, no necessary relation between the bulkiness of instructional material and its effectiveness as an instrument of teaching. Hence, quantitative comparisons alone are inadequate.

The combination of large, significant features of the books with an appropriate amount of detailed analysis is probably the best basis for comparison. Before these criteria are applied, however, a very essential background should be established, namely, the way in which the textbook selected will be used in the subject and grade under consideration.

Anticipated use of the book—Because a textbook or a series of basal texts may be utilized in the classroom in a variety of ways, the exact manner in which the books will be used should be determined. A brief list of possible uses will indicate the importance of this point. A textbook may be used:

1. As the sole basis for content and method of instruction
2. As one of two or three books used by a class or by sections of a class during a course
3. As a partial source of content and method, with considerable material supplied by the teacher
4. With or without printed workbooks or other supplementary published material
5. With or without a detailed course of study which takes precedence over the textbook as a guide.

With this background determined, the criteria suggested in the remainder of this article may be more effectively applied.

Qualifications of authors—Much confidence may be placed in publishers with respect to the selection of competent authors. The latter are

[1] A plan involving the use of objective criteria is described in the article by Waterman in this chapter.—*Editorial Committee.*

usually chosen with much more painstaking care than textbook committees can give to this important question. Advertising circulars usually give full data on the qualifications and experience of authors. Rating sheets for books to be considered for adoption often ask for the teaching experience of the author in the grade for which the book is intended. A textbook written by more than one author may have a broader viewpoint than the work of a single writer, and the participation of an active teacher in the preparation of a text may bring the book and its questions to the desired grade level. Undoubtedly there is, in a series of books, an advantage in having a group of authors or collaborators when such a group represents scholarly oversight of the subject combined with classroom experience at several grade levels.

Promises made in the preface—Following the title page, the examiner next comes upon the preface. It is suggested that he carefully mark therein all claims and promises made by the author, particularly those in which exceptional and unique merits are stated or implied. Prefatory statements of aims and purposes are important when they are made specific and definite; too often they are general and vague. It is sometimes helpful to delete from the prefaces of the several books being examined those statements which would apply equally well to all the texts; the remainder of each preface is then more pertinent to the book in which it appears. All claims and promises made in the preface should be checked in the examination of the book itself.

Content of the book—With the items of authorship and prefaces noted, the textbook committee or individual examiner begins the actual comparison of the books by surveying their content. The content should first be considered apart from the way in which it is organized. The comparison of textbook content includes:

1. The field covered by the book as a whole
2. The range of time (as in history) and of space (as in geography)
3. Correlations with other subjects
4. Topics and subjectmatter used in lesson development
5. Subjectmatter used in making applications of principles
6. Subjectmatter involved in questions, problems, and activities.

It is necessary to go into these aspects of content to bring out existing differences among authors in resourcefulness and ingenuity, in breadth of view, and in the ability to see the lessons and truths of their subjects reflected in many different phases of everyday life and in a multitude of objects and phenomena in the pupils' environment. The significant differences with reference to items 1, 2, and 3 are easily discovered by examining the tables of contents and by a rapid turning of pages to catch any unusual items in the section headings. The comparison of the details of content suggested in items 4, 5, and 6 requires careful reading

and transcription upon cards, or the preparation of typewritten lists of items in parallel columns.

The time-consuming work of applying items 4, 5, and 6 to several textbooks cannot be extended to include the books in their entirety. A few chapters, one or two units, or the treatment of a single aspect of the subject occurring at intervals thruout the book will suffice for detailed analysis and comparison of this sort.

General organization—Intimately associated with the contents of a textbook is its organization into larger parts which indicate the relative emphasis given to successive topics or aspects of the subject. This large-feature organization is seen in the table of contents. Thus, appraisers can easily determine the proportionate emphasis given to grammatical drill and to composition in a series of language books, the amounts of algebra, arithmetic, and geometry in a junior high-school mathematics series, or the percent of the content of a United States history devoted to the period since the World War. The organization of a reading series will show the balance between reading of the recreatory type and that of the work type. The organization as shown in the table of contents will also indicate any serious lack of conformity with the local course of study.

Chapters versus units—It is now the fashion in textbook organization to label all the larger divisions as "units." Indeed, there are many books in which the subdivisions corresponding to chapters are also labeled as units. A sixth-grade language book, recently published, is organized into more than fifty so-called units. In examining textbook units, appraisers will find helpful guidance in an article by Wilson,[2] who considers a valid unit to be "a body of subjectmatter, every item of which is related to a central core of thought." Further, "the unit idea, or central core of thought, is a generalization, comprehensible thru the data grouped about it, and the data themselves acquire full meaning only when they are in direct focus on the generalization."

While the unit organization has a number of advantages over the traditional chapter plan, no textbook should be condemned forthwith because it adheres to the chapter organization.

Order of topics—The tables of contents will also show the order in which the author presents the main topics of his subject. Variations in topic sequence may be found in geographies, arithmetics, language texts, elementary science books, and histories. It is difficult to prove that one sequence of topics is better than another. Textbook committees will favor agreement with local courses of study in this respect. The nature of the material and its effective presentation should outweigh the order in which the topics are treated.

[2] Wilson, Howard E. "The 'Unit' in the Social Studies." *Junior-Senior High School Clearing House* 9: 29-31; September 1934.

Suitability to the grade—By reading a few consecutive pages in several parts of a textbook, an experienced teacher can form an opinion as to the suitability of the book for use in a given grade. This opinion, while subjective, is based on the teacher's knowledge of the pupils' abilities and limitations, in the light of which she takes note of the author's vocabulary, sentence structure, and literary style. The teacher will also give particular attention to the difficulty of questions, problems, and exercises, and she may appraise the work involved in carrying out the activities suggested in the book. In practise, a book will be pronounced "too hard" when any of these difficulties appear to characterize it.

Objective measurements of textbook difficulty have been devised and applied to hundreds of books by a few educators who have had extensive research facilities at their command. Selected elements of reading ease and difficulty have been weighted and expressed in formulas to indicate the proper grade placement of the books. Among the elements chosen for this purpose are:

1. The number of "easy" and "hard" words based on standard word lists, such as that in Thorndike's *Teacher's Word Book*[3]
2. The number of simple sentences
3. The average length of sentences
4. The number of personal pronouns
5. The number of prepositional phrases
6. The number of different words in the passages
7. The number of words beginning with certain letters
8. The number of monosyllables and polysyllables.

No satisfactory summary of the procedures followed by investigators in this field can be given in this article. For further information the reader is referred to the references given in a footnote below.[4]

In addition to the difficulties inherent in words, technical terms, and English constructions, textbooks frequently present ideas and concepts which are beyond the grasp and appreciation of children in the grades where the books are used. Textbook committees should give particular attention to this apparently unavoidable difficulty in the books. In which grades, for example, would it be proper to introduce the following concepts in the pupils' reading: "The rough surface hinders farming and transportation"; "With the interest of the true naturalist, he pur-

[3] Thorndike, Edward L. *Teacher's Word Book*. Revised edition. New York: Teachers College, Columbia University, 1932. 182 p.

[4] The *Winnetka Chart for Determining Grade Placement of Children's Books*. Winnetka, Ill.: Public Schools. ¶ Vogel, Mabel, and Washburne, Carleton. "An Objective Method of Determining Grade Placement of Children's Reading Material." *Elementary School Journal* 28: 373-81; January 1928. ¶ Lewerenz, Alfred S. *The Vocabulary Grade Placement Formula Chart*. Los Angeles: Public Schools. ¶ Thorndike, Edward L., and others. "An Inventory of English Constructions with Measures of their Importance." *Teachers College Record* 28: 580-610; February 1927. ¶ Gray, William S., and Leary, Bernice E. *What Makes a Book Readable*. Chicago: University of Chicago Press, 1935. 358 p. ¶ Stone, Clarence R. *Better Primary Reading*. St. Louis, Mo.: Webster Publishing Co., 1936. p. 61-136, 306-26.

sued his task"; "Man had advanced a long way on his climb to civilization"; "At the bottom of society were the slaves"; "The colony was distinguished for a generous toleration in religious matters"; and "Many forces were uniting our vast country into a unified republic"? The collection and grade placement of expressions of this type, containing ideas beyond the mere meanings of the words themselves, would be a laborious task indeed, but it would greatly assist those who are endeavoring to place suitable textbooks in the children's hands.

The lesson presentation—All textbooks contain passages which specifically teach a particular lesson or explain in detail an important principle. There are many such passages in arithmetic, general science, geography, and language texts. Appraisers should study and compare the presentations of the same lesson in the several books under consideration. Just how is long division developed? How are the seasons of the year explained? How is the pupil made to understand complex and compound sentences or clauses and phrases? Every subject has its hard spots. How are they presented in the books? Examiners should select a few such lessons for detailed examination as to (1) introduction and motivation, (2) development of the lesson, (3) statement of necessary information, (4) the principle or generalization involved, (5) its immediate illustration and application within the child's experience, and (6) questions and activities which compel the child to use the new knowledge obtained.

Resourceful authors often find opportunity on subsequent pages to refer to lessons and principles previously learned. Connecting links of this sort are helpful to the pupil. Sometimes it is possible to indicate the use or importance of a lesson later in the pupil's school life and in the years to follow. Correlations with other subjects are always valuable.

Questions, problems, and exercises—When pressed for time, textbook committees and individual appraisers often resort to *counting* the number of questions, exercises, and problems as the sole method of comparing these important features of the textbooks. An abundance of such aids and checks in the book is both convenient and desirable. Keeping in mind that the number of exercises has nothing to do with their effectiveness, we are justified in making quantitative comparisons among the books, provided that comparable exercises are counted in each case. The following cautions should be observed:

1. Drill exercises in arithmetic, for example, should be counted in such a way as to show differences in the amount of computing required of the pupil. Such exercises vary from those which can be performed by recalling a single number combination, to those requiring forty or fifty successive manipulations of number combinations, as in column addition and long division.

2. Concrete problems should likewise be analyzed according to the number of steps of which they consist, and the amount of work involved in their completion by the pupil.
3. The longer assignments, consisting of entire projects or other extended applications of knowledge gained, should be given separate consideration.

Far more important than these quantitative aspects of textbook exercises is their actual teaching power when they are studied by the pupils. What do the questions cause the pupil to do? Do they lead to genuine thought on his part or only to the recall of an item that has been memorized? "Thought questions" are claimed for every textbook, and this claim should be carefully investigated. More thought is stimulated if, in a true-false test, the pupil is required to tell why each statement he marks false is so regarded, than if the pupil is asked merely to indicate truth or falsity without giving reasons. To get at the heart of this matter of questions and problems, textbook appraisers will do well to give separate consideration to:

1. The balance between memory questions and thought questions
2. Questions (a) within the pupils' experience, and (b) outside their experience
3. Questions calling for study or reading outside the textbook
4. Variety of form and range of content in the questions themselves
5. Balance in the number of traditional and of "new type" questions
6. Individual and group activities called for
7. Activities which take pupils away from books and desks.

Many children have trouble with problems of all sorts because of reading difficulties. For this reason the phrasing and vocabulary of all questions and directions for activities should be carefully examined.

Illustrations and mechanical features—In the absence of published evidence on the subject, the writer offers here a few suggestions for judging textbook illustrations, based on his interviews with teachers and on his experience in the field of textbook publishing. First of all, the teaching purpose of each picture in a book should be evident, and the connection between text and pictures should be indicated to the pupil. Among the most effective types of illustration for driving home a lesson is the "contrast" picture which brings out differences between past and present ways of living, between desert and jungle, between agriculture and manufacturing, and the like. Serial and composite pictures also are instructive because of the relationships they show. Pictures in which the pupils can see people at work and play are usually superior to views of empty streets and buildings. The presence of an operator adds to the value of a picture of a machine. Statues showing costumes and other objects give more information than do pictures of shafts. Interiors of factories are generally more instructive than exteriors. A legend imparting information or asking a question is often preferable to a mere title for a picture. In short, the illustrations in the

textbook should be possessed of teaching power, and the author's use of them as instruments of instruction should be evident.

Publishing houses have developed high standards of excellence in the physical makeup of textbooks. Their experts go into all phases of technical manufacture—paper, printing, illustrating, binding, and artistic planning—to a degree not possible with a committee of teachers. All teachers can, however, be on the lookout for any defects which appear, such as paper with a glare, paper on which the reverse printed side shows thru, monotonous-looking and otherwise badly planned pages, and awkward size or weight in the book.

The textbook as a whole—The trend of criteria for judging textbooks has been in the direction of detailed analysis. Special rating schemes are necessary for each subject in the curriculum. Existing score-cards are for the most part still too indefinite; they should in many cases be made even more detailed than they now are. It is inevitable that textbook committees will expend most of their effort on analysis and dissection. This work of dissection, however, should be counterbalanced by the careful consideration of each book as a whole. Every textbook has its own individuality, its own contribution, and its own "totality." There is something inherent in each textbook over and above the arithmetic sum of its component elements as defined and weighted by the statistician. Appraisers of textbooks, upon the completion of their analytical work, should examine each book anew in search of that unique totality which it is sure to possess. Viewed in this way, a textbook may have a new force and power not discoverable in the customary examination by minute analysis. In this total pattern is the living thought and spirit of the author. Let textbooks be chosen which, in addition to essential details, have a desirable and potent totality.

> TO ELIMINATE all except recently published books from basal use is to shut one's eyes in ignorance and arrogance to the fact that there are schoolbook classics just as there are classics of general literature and classics of music. . . . It would be sad indeed if the curricular unrest characteristic of American education today should blind teachers to the fact that there are such things as schoolbooks that have permanent or at least semipermanent value.—Knowlton, P. A., in *Nation's Schools*, May 1934, p. 24.

A PLAN OF TEXTBOOK EVALUATION

IVAN R. WATERMAN

Chief, Division of Textbooks and Publications, California State Department of Education, Sacramento, California

TEXTBOOKS are used to a greater extent and exert more influence on the quality of instruction than any other instructional tool. In consequence of this fact, the selection of textbooks is comparable in importance to the selection of teachers. Too often has teaching been handicapped by poor textbooks, chosen without adequate examination or by haphazard methods of evaluation.

During recent years, however, the trend toward scientific selection of textbooks has been distinctly encouraging. This trend may be attributed first to a growing realization of the importance of the textbook as a tool of instruction. This, in turn, has led to the development of technics which offer reasonable assurance for the selection of those textbooks best suited to the educational purposes they are intended to serve. This article presents a plan of evaluation designed to aid in selecting textbooks which are best suited to educational demands.

GENERAL FEATURES OF THE PLAN

The two chief characteristics of this plan are: (1) an analytical approach involving the comparison of books under consideration on each of the several factors which contribute to the ability of a text to fulfil its purpose; and (2) the use of objective measurement wherever possible in making comparisons. The plan involves the following four basic procedures, each of which will be described briefly and illustrated with examples from practise:

1. The formulation of a set of criteria or standards by which the textbooks may be judged
2. The construction of a score-card based on the assignment of a numerical value to each of the criteria, in accordance with its relative importance
3. The conduct of comparative studies of the textbooks, such studies being objective in nature so far as possible
4. The rating of textbooks on the score-card on the basis of data from the comparative studies.

FORMULATION OF CRITERIA

Evaluation presupposes valid standards or criteria. The use of a valid set of criteria in selecting textbooks has the following definite values:

1. It forces an analytical approach to the problem, and assures that the final judgment of relative merit is based on comparisons of the textbooks on each specific point of consequence.
2. It tends to eliminate hasty judgments based on superficial examination and general observation.

3. It assures that books will not be selected because of their excellence in a few traits, altho they may be deficient on others.
4. It provides the same basis of judgment for all judges.
5. It furnishes a basis for *objective* comparisons in determining the relative merits of the textbooks. Even tho few objective comparisons are made, the final judgment is analytical rather than general.

Consideration of purposes to be served—Fundamental to the development of criteria for textbook selection is a careful consideration of the purpose or purposes to be served by the book. Several points may well be emphasized in this connection:

1. The nature of the textbook must be determined by the purposes of instruction. Otherwise, the result is likely to be confusion, or, even worse, the textbook will determine the nature of instruction.
2. The criteria are very largely an expression of educational philosophy with respect to teaching in the subject under consideration.
3. The course of study should serve as a guide in developing a statement of the purposes and nature of the textbook.
4. As purposes and methods of instruction change, so will the criteria by which textbooks should be judged. The function of the textbook is now being rapidly modified.[1] Full recognition should be given this trend in developing criteria for selecting textbooks. Standards satisfactory a few years ago may be entirely inadequate today.
5. Criteria should be formulated specifically in terms of the subject of the book. While a few general standards will apply to textbooks in many subjects, there are many points of major importance which apply to one subject and not to others. Score-cards devised to evaluate books in all or many subjects, and containing a few general standards organized under such headings as content, method, and mechanical features, are ill-suited to scientific textbook evaluation.
6. Textbooks may not properly be expected to contribute to all purposes of instruction; other types of instructional materials may be necessary or more effective for the accomplishment of certain purposes.

Sources of criteria—There are two general sources from which criteria for textbook evaluation may be derived: (1) conclusions from research on methods and materials of instruction, and (2) where research is lacking, a consensus of educational authority.

Many standards for textbook selection proceed directly or impliedly from well-established psychological principles or from more specific conclusions of research on learning. The following criteria[2] appear to be justified on this basis:

In arithmetic:

1. The amount of drill on different combinations shall be so distributed that more practise is provided for the more difficult combinations.
2. The texts should include diagnostic tests designed for the discovery of specific weaknesses.

[1] Kersey, Vierling. "The Place of the Textbook in the Modern Educational Program." *California Schools* 7: 309-12; October 1936. Sacramento, Calif.: State Department of Education.

[2] The examples given here are among the criteria used by the writer and the California State Curriculum Commission in evaluating elementary-school textbooks.

3. The processes presented shall be of demonstrated social value. Known learning difficulties should be anticipated in the presentation and the provisions for practise.
4. Problems and processes involved in their solution should be presented in connection with each other.
5. Problems should be meaningful in terms of children's experiences, and real in terms of life situations.

In reading:

1. The material should be written in terms of children's known interests.
2. Material should be provided for developing the several distinct types of reading skills.
3. The reading difficulty of the materials should be in accordance with the grade placement of the book.

In spelling:

1. There should be more frequent repetition of words of greater difficulty for review purposes.
2. Words should be assigned to grade levels on the basis of spelling difficulty and frequency of usage.

In geography:

1. The relative number of pictures on various subjects, such as native life, human habitation, manufacturing, and commerce, should correspond to the importance attached to the subject.
2. In upper-grade geography texts there should be more pictures of the "cultural-natural" type than of the "cultural" or "natural" types.[3]

The foregoing examples are suggestive of the rich source for textbook standards provided by the conclusions of research. Many characteristics of textbooks, however, are not subject to appraisal on the basis of standards of this type. In such cases, criteria must be based on a consensus of educational authority as to what constitutes best theory and practise. Following are examples of such criteria:[4]

In arithmetic:

1. The texts should include informational arithmetic materials in which the emphasis is placed on understanding, interpretation, and use, rather than on processes and skills.
2. The problems should be so organized that several problems arise from one large situation.

In spelling:

1. The major basis for grouping words should be their meaning and use relationships rather than their similar structure.
2. Texts should include exercises for helping the pupil to study word meaning.

In reading:

1. There should be an appropriate balance between the amount of material devoted to the various curriculum fields such as history, science, geography, and civics.
2. Selections should be of high literary character.

[3] Classification taken from: National Society for the Study of Education. *The Teaching of Geography.* Thirty-Second Yearbook. Bloomington, Ill.: Public School Publishing Company, 1933. p. 163.

[4] There may be a difference of opinion as to whether some of these criteria represent a consensus of expert judgment. This, however, does not detract from their value for purposes of illustration.—*Editorial Committee.*

In formulating criteria it is important to list all specific items which contribute to the merit of a textbook, so that no factor of consequence will be overlooked in comparing books. Overemphasis on small details may be avoided by proper weighting of the several items.

CONSTRUCTION OF A SCORE-CARD

The use of the same set of criteria by each member of an evaluating group assures that the same general standards will be used by all. It will be immediately apparent, however, that certain criteria are of greater importance than others, and that different individuals will attach varying degrees of importance to each criterion. These facts suggest the advisability of constructing a score-card by weighting the criteria in accordance with their relative importance. The following procedure is suggested: Let each member of the evaluating body assign a numerical value to each criterion in accordance with his judgment of its relative importance. A 1000-point scale will prove convenient for this purpose. Then average the values assigned to each criterion by the several judges. These average values will constitute the weighting to be used on the score-card.

Advantages of a score-card—While such weighting is based on opinion, the score-card has certain definite values. First, it reflects the judgment of the evaluating body as to the relative importance of each standard. Furthermore, it assumes that all judges will use the same measuring stick for determining the relative merits of textbooks under consideration.

The following example will illustrate the practical value of using a score-card constructed in the manner described: Suppose two reading textbooks are being considered, each book conforming fairly well to all the criteria for judging them. Without a score-card, Book A may be considered best by one judge because its materials conform most closely to children's known interests—the point he considers of greatest importance. Another judge, admitting this superiority, may rate Book B as best because its reading difficulty—the point which he considers of most importance—conforms best to the grade placement of the book. It is easily conceivable that different judges, each using the same criteria and a careful analytical approach, will arrive at different conclusions. Possibly, of nine judges, three groups of three each will favor three different books. Such a result is confusing, to say the least.

The use of a score-card helps to remove this difficulty. Different ideas on the relative importance of the several criteria are ironed out in constructing the score-card on the basis of average judgment. In rating several textbooks by means of the score-card, it is highly probable that

the several judges will agree closely on the relative merits of the books. Thus the use of such an instrument appears of distinct practical advantage, especially if one considers the situation of an adopting board confronted with a recommendation based on a close decision of the evaluating body.

Caution needed—One danger in the use of score-cards for evaluating textbooks may well be indicated at this point. A book might be entirely deficient in some essential feature, and yet be so superior on other points that it would be rated highest. For example, the vocabulary difficulty of a book might be entirely unsuitable, and yet the book might have the highest rating. Such a case would be similar to that of a school building with a score-card rating in excess of 900 points, but with no light in the classrooms. Both the book and the school building would be utterly unusable. The danger of selecting an inferior book on the basis of highest total score may be avoided by first eliminating from further consideration those books which obviously fail to meet an important criterion, and then rating on the score-card only those books which are at least fairly satisfactory on all important points.

An illustrative card—As an example, Figure I presents the score-card used by the California State Curriculum Commission in evaluating music textbooks for the seventh and eighth grades.

MAKING COMPARATIVE STUDIES

The items contained in a score-card form the basis for a series of comparative studies by which the relative merits of the textbooks under consideration may be determined. Many such studies may be largely objective. To indicate their nature, Tables 1, 2, and 3 are presented showing comparative data in summary form on different aspects of textbooks in three subjects—reading, arithmetic, and geography.[5]

Comparison when objective data are not obtainable—On many points, comparative studies of an objective nature are impossible, but valid comparisons may nevertheless be made. One example will serve to illustrate this. An important criterion of music textbooks is that the songs shall be of high musical quality. Altho objective means do not exist for determining the relative merits of books on this point, recourse may be had to expert judgment. Each of several qualified experts may be asked to rate each song in each book for musical quality on a scale ranging from excellent to poor. The average of the individual judgments may be used as the measure of musical quality. The degree of agreement among the judges is a measure of validity.

[5] These data are taken from studies made by the Division of Textbooks and Publications of the California State Department of Education as a basis for the evaluation of elementary-school textbooks by the California State Curriculum Commission.

CRITERIA FOR EVALUATING SEVENTH- AND EIGHTH-GRADE MUSIC TEXTBOOKS

The textbooks should present a program of instruction in music designed to accomplish a series of specific objectives, and graded in terms of the musical interests and abilities of seventh- and eighth-grade pupils. Textbooks must represent far more than a mere collection of songs.

	Weighting
I. The songs should be of musical and literary excellence and of such nature as to contribute to the development of the love and understanding of good music.	175
II. The songs should appeal to the interests of seventh- and eighth-grade children, and the content should be meaningful to the pupils of these grades.	150
III. The music should be within the voice ranges of seventh- and eighth-grade pupils.	125
IV. The material should be graded in such a manner as to facilitate pupil learning, and should be suited to individual differences in musical ability among the pupils.	100
V. There should be an adequate number and a wide and appropriate variety of: A. Musical types B. Rhythms C. Nationalities D. Periods E. Subjects F. Unison, two-, three-, and four-part songs	100
VI. The music materials should correlate with other activities of the curriculum, should be of such a nature as to contribute to pupil activity both in and out of school, and should include appropriate material for school programs and special school and community occasions.	100
VII. Descriptions and expositions of important facts, such as biographical and historical sketches, should be included.	50
VIII. Material designed to aid understanding of and appreciation for instrumental music should be provided.	30
IX. Illustrations that stimulate interest in music and aid in promoting understanding and appreciation should be included.	50
X. References to other musical selections, phonograph music, and other sources should be included.	30
XI. Suitable accompaniment should be provided.	35
XII. An appropriate index should be provided.	20
XIII. Mechanical features: A. Suitable type and music notation B. Attractive appearance C. Durable binding D. Suitable paper E. Attractive cover F. Well-proportioned margins and suitable arrangement of printed material on page G. Illustrations	35
Total Possible Score	1000

FIGURE I—SCORE-CARD USED BY CALIFORNIA CURRICULUM COMMISSION FOR APPRAISING MUSIC TEXTBOOKS

TABLE 1—COMPARATIVE DATA ON SIX READING TEXTBOOKS FOR GRADE VI

CHARACTERISTICS OF BOOKS	BOOKS						MEDIAN FOR 15 BOOKS	RANGE FOR 15 BOOKS
	A	B	C	D	E	F		
1	2	3	4	5	6	7	8	9
1. Quantity of reading material:								
a. Total number of equalized pages	363	358	381	469	568	408	363	568–272
b. Total number of reading selections	76	64	140	60	60	54	64	140–24
c. Average length of reading selections	4.78	5.59	2.72	7.82	9.47	7.56	5.59	12.13–2.72
2. Balance between prose, poetry, and plays:								
a. Percent of prose material	98	98	91	98	98	96	96	100–82
b. Percent of poetry material	2	2	9	2	2	1	2	16–0
c. Percent of plays	.....	.....	.....	.....	.....	3	.....	7–0
3. Balance between major fields of reading material:								
a. Percent of social studies	30	22	31	31	36	26	26	61–4
b. Percent of science	30	19	14	14	13	28	14	34–2
c. Percent of literature	40	59	55	55	51	46	55	94–13
(1) Percent of legends, fables, myths	3	4	3	7	8	3	3	34–0
(2) Percent of stories	23	37	31	38	33	35	36	63–0
(3) Percent of biography	12	16	12	8	8	4	8	21–0
(4) Percent of poetry	2	2	9	2	2	1	2	16–0
(5) Percent of dramatizations	.....	.....	.....	.....	.....	3	.....	7–0
4. Balance between basic types of reading material:								
a. Percent of silent recreatory	23	30	9	43	44	13	30	54–0
b. Percent of oral recreatory	4	3	16	2	2	6	5	16–0
c. Percent of silent work-type	73	67	75	55	54	81	67	100–28
(1) Percent in fact form	71	56	54	31	33	22	31	100–2
(2) Percent in story form	2	11	21	24	21	59	21	59–0
5. Provision for basic reading abilities:								
a. Percent to comprehend material	51	41	47	63	61	46	44	90–18
b. Percent to locate information	18	18	10	5	12	10	12	48–2
c. Percent to select and evaluate material	8	10	15	12	3	26	12	38–1

TABLE 1—COMPARATIVE DATA ON SIX READING TEXTBOOKS FOR GRADE VI (CONTINUED)

CHARACTERISTICS OF BOOKS	BOOKS						MEDIAN FOR 15 BOOKS	RANGE FOR 15 BOOKS
	A	B	C	D	E	F		
1	2	3	4	5	6	7	8	9
5. Provision for basic reading abilities (contd.):								
d. Percent to organize material	5	3	18	6	11	4	10	32–0
e. Percent to decide what to remember and how to remember it	18	28	10	14	13	14	13	43–4
6. Balance between curriculum subjects and outside interests:								
a. Percent of outside interests	21	39	26	40	29	27	40	62–0
b. Percent of curriculum subjects	79	61	74	60	71	73	60	100–38
(1) Percent of history	21	28	23	30	39	5	18	39–5
(2) Percent of science	19	17	21	15	14	29	15	29–8
(3) Percent of civics and citizenship	18	3	20	3	9	21	9	21–1
(4) Percent of geography	15	10	4	7	8	5	5	17–0
(5) Percent of all others	6	3	6	5	1	13	6	36–1
7. Basic interest themes represented in reading material:								
a. Percent of dramatic, heroic action, and adventure	13	18	16	41	32	18	24	41–0
b. Percent of interesting action not dramatic	4	12	14	16	13	14	12	19–0
c. Percent of humor	2	2	4	[a]	.....	.....	2	11–0
d. Percent of fairy and supernatural	.....	3	.....	6	6	3	3	13–0
e. Percent of home life and child life	1	2	8	5	5	7	5	12–0
f. Percent of interesting characters	15	19	21	6	14	4	13	22–4
g. Percent of character traits	10	7	8	3	3	11	7	20–2
h. Percent of appreciation of nature	1	1	11	4	1	1	1	11–0
i. Percent about animals and personification	7	1	1	5	8	3	5	9–0
j. Percent of interesting information	47	35	17	14	18	39	18	85–5

Read table: Under "Quantity of reading material," the number of equalized pages was found to be 363 in Book A, 358 in Book B, 381 in Book C, 469 in Book D, 568 in Book E, and 408 in Book F. Median number of pages for fifteen books examined was 363, and the range was from 568 to 272 pages. Similarly read figures for the other characteristics listed in column 1.

[a] Less than 1 percent.

RATING THE BOOKS

The final step in the plan of evaluation consists of the interpretation and utilization of the data from the comparative studies in rating textbooks on the score-card. Careful interpretation is highly important. The data from comparative studies, even if highly objective, often are not of such a character that they may be directly translated into points on a score-card. Furthermore, there are qualitative differences of as great importance as the quantitative ones, and these qualitative differences are not always apparent in the data of an objective study. For

TABLE 2—NUMBER OF LINES OF INFORMATIONAL ARITHMETIC IN SIX ARITHMETIC SERIES, GRADES VII AND VIII

TOPIC	SERIES					
	A	B	C	D	E	F
1	2	3	4	5	6	7
1. Buying and selling	64	41	119	470	180	40
2. Thrift and economy	.....	9	.....	33	32	74
3. Keeping simple accounts	263	123	56	73	296	121
4. Building up capital	46	.....	.....	33	113	56
5. Marks of a good investment	33	.....	6	33	20	156
6. Stocks and bonds	164	172	229	345	270	228
7. Real estate	.....	.....	.....	.....	16	8
8. Building and loan	.....	16	.....	27	.....	33
9. Banking	141	169	409	694	388	139
10. Mortgages	.....	.....	.....	66	.....	8
11. Interest	41	24	56	723	89	66
12. Insurance	96	90	119	508	179	340
13. Building homes	.....	.....	7	.....	30	39
14. Commission	.....	41	14	65	23	.....
15. Taxes, levies, public expenditures	16	78	227	418	219	406
16. Post office	16	7	45	49	16	16
17. Home and public service	40	94	54	146	328	74
18. Government	.....	.....	10	.....	.....	22
19. Sending money	.....	49	7	99	73	.....
20. Agriculture	.....	68	24	.....	208	97
21. Manufacturing	.....	.....	6	.....	8	24
22. Transportation	.....	19	64	.....	8	83
23. Power	.....	.....	24	.....	.....	10
24. Forestry	.....	.....	5	.....	33	5
25. Fishing	.....	.....	.....	.....	.....	24
Total number	920	1,000	1,481	3,782	2,529	2,069

Read table: The number of lines of material dealing with "buying and selling" was 64 in Series A, 41 in Series B, 119 in Series C, 470 in Series D, 180 in Series E, and 40 in Series F. Similarly read figures for the other topics listed in column 1.

469 in Book D, 568 in Book E, and 408 in Book F. Median number of pages for fifteen books
Similarly read figures for the other characteristics listed in column 1.
• Less than 1 percent.

example, Table 2 indicates the *amount* of informational arithmetic of each kind in several arithmetic series, but does not reveal anything concerning the *quality* of this material. Further study is needed to judge this point, and it is largely a matter of opinion to combine amount and quality into a single measure of adequacy.

Briefly stated, the rating of books on a score-card may be accomplished as follows:

1. Let the total weighting assigned to any criterion represent the number of points which may be assigned to a book which meets the criterion perfectly.
2. Let each judge assign to each book on each criterion a point value which represents his opinion of the extent to which the standard is met. This implies that a zero rating will be assigned to a book on any item of the criteria which is totally lacking.

TABLE 3—NUMBER OF MAPS IN THREE SERIES OF GEOGRAPHY TEXTBOOKS

TYPE OF MAP	SERIES		
	A	B	C
1	2	3	4
I. Colored maps:			
1. Physical-political	.....	16	42
2. Physical	26	15	12
3. Political	44	3	17
4. Human use	14	.....	7
5. Relief maps	17	.....	6
6. Local areas	5	15	6
7. Miscellaneous	2	.....	2
Total colored	108	49	92
II. Black-white maps:			
1. Weather	25	14	39
2. Natural regions and resources	6	15	19
3. Production regions	8	52	61
4. Population	12	9	9
5. Local areas	.....	5	22
6. Transportation	4	2	28
7. Historical	.....	1	10
8. Imports and exports	.....	.....	6
9. Maps used as study guides	7	4	10
10. Miscellaneous	12	12	31
Total black-white	74	114	235
Grand total	182	163	327

Read table: Under "Colored maps," the number of physical-political maps was "none" in Series A, 16 in Series B, and 42 in Series C. Similarly read figures for the other types of map listed in column 1.

3. The total point score assigned to each book will represent its relative merit. The average of the several judges' ratings will represent the judgment of the evaluating group. The extent of agreement among the several judges is one measure of the validity of the group rating.

PERSONNEL FOR TEXTBOOK EVALUATION

Altho this article is devoted to *procedures* for textbook evaluation, a brief statement concerning the personnel for carrying it on should not be amiss. Following are a few suggestions on this point:

1. Textbook evaluation should be performed by a committee or commission, rather than by a single individual or by an entire teaching force.
2. Altho textbook selection may properly be considered an administrative problem, it is highly important that classroom teachers participate in the evaluation of books under consideration.
3. Committees for textbook evaluation should consist of teachers, supervisors, principals, and members of the superintendent's staff.
4. There should be a close relationship between course-of-study committees and textbook-evaluation committees.
5. In textbook selection by cities and counties, there are advantages in establishing separate committees for the evaluation of books in different subjects.
6. The services of a research department or of individuals with special qualifications for conducting research studies on the relative merits of textbooks are essential to the success of any plan to select such books on a scientific basis.

SUMMARY AND CONCLUSION

The plan of textbook evaluation described above is designed to assist in selecting those textbooks which are best suited to meet educational needs. The two most important characteristics of the plan are (1) an analytical approach by which the relative merits of textbooks are judged with reference to specific standards of excellence, and (2) the use of objective methods in comparing textbooks.

Four basic procedures are involved: (1) the formulation of criteria for judging textbooks, (2) the construction of a score-card, (3) the conduct of comparative studies, and (4) the use of the score-card to rate the books on the basis of data from the comparative studies.

The success of this plan depends upon the validity of the criteria, and upon the extent to which objective data rather than opinion are used in the rating. Each procedure involved in the plan appears to be essential in the application of scientific methods to the problem of textbook selection. A textbook committee using the plan intelligently can be reasonably confident that it will result in the selection of the book or series of books which is best in terms of the criteria or standards used for evaluation.

AN APPRAISAL OF TWO TYPES OF MOTION PICTURE EQUIPMENT FOR SCHOOL USE

JAMES G. SIGMAN, *Director*

and

JOHN T. GARMAN, *Special Assistant*

Division of Visual Education, Board of Public Education, Philadelphia, Pennsylvania

THE earliest educational motion picture projectors were theatrical machines adapted for booth projection in auditoriums. Because of their size and cost, these projectors were later supplemented by portable and semi-portable types of lower prices, available under proper protection for classroom use with the standard or 35 mm. film.[1] At the same time, quite a variety of sub-standard motion picture projectors appeared, some for 28 mm., others for 23 mm., and still others for 16 mm. or narrower film. From these many confusing sizes it gradually became evident that the 16 mm. type combined the qualities of economy, portability, and safety to the greatest degree, and this size has been adopted rather universally in the United States for narrow-width film projection.

It should be remembered, however, that the standard motion picture projector still has its uses in our schools and colleges, particularly since the adaptation of sound to film exhibition. The larger equipment has by far the greater choice of film subjects for instructional and entertainment purposes. It still excels in power and brilliancy of projection, and is the only type of machine which will throw pictures across the great galleried auditoriums of our large city high schools. But many of these very factors have also handicapped its use for truly instructional ends. The initial survey of the sixty-two standard (35 mm.) projectors in the public schools of Philadelphia in 1929 disclosed the fact that their operation had hitherto been very irregular and unorganized due to a number of causes.

DIFFICULTIES IN THE USE OF STANDARD EQUIPMENT

Use limited to auditoriums—One of these factors was found in the fact that standard (35 mm.) machines are housed in booths in school auditoriums, where they cannot be used to advantage thruout the school day because of the constant occupancy of the auditorium for class work in public speaking, for study-period purposes, or for mass instruction or forums in civics, oral English, hygiene, or music. At times these subjects are supplemented by films, but in general the instructional demand for

[1] The number of millimeters refers to the width of the film.

the assembly hall restricts the use of pictures to morning assembly periods or after-school activities. It gradually dawned upon educators that motion pictures would never take their rightful place in the educational scheme of things until they were placed in the classroom, to be shown exactly at the time and place in the course of study where they would possess true and correlative value. Such value is very hard to obtain in the school auditorium even when it is vacant at the desired period, because of the massing of classes, the mixture of grades, and the resultant holiday spirit. The best instructional approach and the correct review of any film lesson are much harder to obtain under assembly projection than under classroom projection.

Operators' licenses hard to obtain—Our survey also discovered a drawback to the best use of the standard or auditorium motion picture machines along the line of operation and upkeep. Since most of the theatrical film is of the nitrate or inflammable type, the rules regarding the operation and care of machines and booths are very strict in practically all states and cities of our country, and properly so. The examinations for operators' licenses are correspondingly rigid, and it is difficult for teachers to pass the commercial license requirements. This is particularly true in those cities where the educational or special license has been abolished and where the full technical demands must be met, even to serving for a period of time as apprentice in a motion picture booth. Teachers ordinarily cannot meet these tests. About twenty of the sixty-two machines in the Philadelphia schools were found to be generally unused both because of the lack of operators, and because of the rapid turnover of operators thru the promotion of the young man teachers to principalships or to higher school teaching positions. Practically all the junior and senior high schools were free from this handicap, however, because their teachers of electrical and scientific subjects had passed the examinations for operators' licenses before these became excessively severe. Since this survey, the board of public education has employed four licensed operators as part of the personnel of the division of visual education for the service of those schools which have no local licensed operators, and practically all the standard machines are now in use, periodically at least.

Danger from inflammable film—A third drawback to the constant use of booth machines is the danger that lurks in the inflammable or nitrate film. The film library, which is located in the offices and workrooms of the division of visual education, contains only acetate or safety film. Beginning in 1930, all bookings from outside sources were discontinued, and the sixty-two schools with standard machines have been serviced and supplied with film and accessories from this central film library. All booths have been constructed with exact fidelity to the

rules of the city fire marshal. As a result of these changes it is believed that the fire hazard has been completely removed.

Unsuitable content of films—A fourth factor which militates against the sole use of standard (35 mm.) machines in schools arises from the character of the film available. The latter is undoubtedly superior in regard to the vast variety of titles, especially in the field of historical films, altho many of the best of these are now being printed upon the narrow-width stock. The wide film has the advantage in the entertainment type of picture, which has a place in after-school or extracurricular programs, as before mentioned. But unfortunately the rental and purchase prices of these higher grade films, notably the Yale *Chronicles of America,* have made their universal use a matter of slow accumulation. Many of the smaller school units and communities, as well as some of the larger cities, have turned to the free lists for their film, including industrial, governmental, and commercial sources of all sorts. Without any disparagement whatever of these splendid films, it must be conceded that in most cases they are general information reels, made without special thought to courses of study or specific instruction, and frequently containing a marked amount of advertising material.

INTRODUCTION OF NARROW-WIDTH FILM AND PROJECTORS

For all these reasons, in spite of the great value of standard equipment for mass instruction in special subjects in higher schools, schoolmen have turned with enthusiasm to the consideration of the narrow-width film and projectors, commonly called the classroom or teaching type. These made their first appearance on the market many years ago, and gradually, of a variety of sizes, the 16 mm. became the favorite. Many reasons may be advanced for their lower cost, especially the absence of expense for a booth or similar equipment. They were even more portable than the so-called "suit-case" models of the standard machines, accompanied by their portable booths. The latter were not permitted as legal in some cities because of the impossibility of installing the proper flues and fans found in regularly constructed booths. They had to be inspected by a representative of the fire marshal's office before each separate showing or setup. All such complications were avoided by the adoption of the 16 mm. machines for use in homes, churches, and schools, since only safety film is made and sold for this type, and no booths are required. The operation of these machines is free from technical difficulties, and examinations for licenses either are not required or are very simple. The 16 mm. equipment, therefore, possesses all the merits of safety, economy, and simplicity.

Purchasing new machines—As a result of the survey and inventory of visual materials in the Philadelphia schools, the visual education

committee of the board of education decided to supply *new* senior high schools needing standard motion picture machines by transferring little-used projectors from certain elementary schools, and to make a tryout of the narrow-width or classroom projectors in other schools which were interested. It was finally settled that sixteen of these projectors should be purchased, eight of one standard make, and eight of its leading competitor at that time.

Developing a film library—Formation of a circulating library of 16 mm. film was, of course, the next logical step to facilitate the proper functioning of these new projectors in the schools. About 120 reels covering 80 titles were purchased from a half-dozen companies as an initial investment in film. Half of these were made up of required subjects, closely connected with the course of study in geography, with several prints of each subject selected. The other half of the circulating library included supplementary subjects in the departments of health, nature study, geography, and general science—one print each. This second section was intended to enrich the required curriculum, and also to try out new titles before their purchase on a large scale for required use in schools.

COMPARISON OF STANDARD AND NARROW-WIDTH EQUIPMENT

Narrow-width machines a success—As the years pass, this experimental use of 16 mm. projection alongside the standard or auditorium type has given us an unusual opportunity to compare their respective advantages and disadvantages. With all due allowance for the enthusiasm of teachers and principals possessing a new and long-desired piece of apparatus, it may safely be stated that the 16 mm. machines have justified their adoption. While the standard machines have been serviced at the same time, and supplied with an ample film library under new organization and operation, the use of the 16 mm. projectors has been much more regular and systematic, and the demand for 16 mm. film correspondingly greater. During the first term's use, six of these machines required minor repairs, and one had to be returned to the factory. This is a fair record in view of the fact that all were being used for the first time, and by varied and unskilled operators.

Lesson plans are published with all reels of classroom film. These are sent regularly in advance of the film to the schools, and the showing of films in the classrooms is directly related to the curriculum and the daily assignment. Films are supplied to each school for a period of one week each.

Standard machines valuable for certain purposes—At the same time, the 35 mm. machines have been used with much more regularity, and many of the older models have been repaired and serviced for the first

time in years. It must be noted, however, that these standard projectors are largely in use for morning assembly or after-school and club periods. The films requested are generally of the quasi-entertainment type—scenic, commercial, and industrial. Several principals of higher schools using these standard projectors have requested that they be furnished also with 16 mm. classroom projectors, in order to have the advantages of both types. Realization of the limitations of the auditorium type, together with recognition of its distinct value for mass entertainment or instruction, must be responsible for these requests. The fact that many of the finest films, such as the Yale *Chronicles of America*, are now made in both 16 mm. and 35 mm. sizes, would seem to make such a plan entirely feasible.

The fact that most of the classroom or 16 mm. film issued thus far falls within the realm of the elementary or junior high-school curriculum, seems to indicate that this type of projector is particularly adapted to these schools, while the standard machine is better for the senior high schools. This is true because the senior high schools are able to make better use of the industrial and commercial film which is published in such profusion for their specialized courses, and because these schools are equipped with the booths and auditoriums required for standard equipment. Their facilities, and also those of the junior high schools, are fairly sure to include electrical or other shop teachers who will give the standard booth machines the care and repair that they require, and who are also able to qualify as licensed operators if the local requirements are reasonable.

As a matter of fact, the senior high schools and the junior high schools, with their more highly specialized courses, will perhaps ultimately be the educational center of motion picture usage, both for classroom and for auditorium projection. In industrial and mechanical courses nothing can equal the motion picture for supplementary instruction in the detailed processes of manufacturing. Motion pictures are the best form of visual instruction where action is to be portrayed. Their value for projecting dramatic situations of all sorts will make them just as helpful in the study of history and literature, provided that the great masterpieces can be preserved and reprinted for school use upon safety stock at a price within reach of the ordinary school budget. In biology the growth processes of plant and animal life will be available in every classroom, while chemical and physical changes will no doubt be recorded with equal fidelity. Pictures of games and sports, projected in slow motion, will supplement the work of physical and health education, helping to teach posture, form, and the technic of athletics.

Many of these topics have already been treated and taught by the scenario method, but their application to the 16 mm. or classroom

machine is needed to make them of more practical and general service to schools. Even in teachers colleges, films have been employed in the classroom for instruction in methods and for illustrative material, notably by Dr. Herbert Spencer of the Frick Training School for Teachers in Pittsburgh. The 16 mm. machine usually has been the medium of projection employed. Its suitability for demonstration work in medical and dental clinics has likewise been tested with success.

Reports from elementary-school principals—Our own use of the 16 mm. projector at first was restricted largely to elementary schools, only a few higher schools making any extended use of these machines. These projectors gave their greatest service in the fourth, fifth, and sixth grades. There it was found that the unit lessons in geography and nature study were the best in quality and the greatest in quantity. The results have been remarkably good, and may best be appreciated by the perusal of excerpts from the reports of principals in the schools using the equipment. Such excerpts are given by number rather than by name in the following paragraphs:

1. Our motion picture machine (16 mm. type) is an invaluable addition to our equipment. It is easily operated. Every teacher has learned how to use it. The new portable screen is very satisfactory. The geography films are most interesting and instructive, but the hygiene films are too advanced for pupils of elementary schools in some cases. Teachers report that they find fifteen minutes of good motion pictures bring better results than several regular lessons. In the follow-up there is no difficulty in getting children to discuss the subjectmatter, and to read of it in their books. The question arises whether we should not have a new time allotment sheet to allow for these visualization lessons. I hope that the time will come when we will have good pictures taken from literature and history.

2. I think the new motion picture machine is an excellent addition to our equipment. The children love it and so do I. After each visit to the visual room we have had a regular lesson on the same subject as the film. It is amazing how much the children remember. They also ask if they will ever see the same picture again. They seem to want to see the pictures again, especially after we have discussed them. The machine ran beautifully on the occasions when I used it, and I am sure the more I learn about it the better I'll like it. In fact, to be honest, I cannot at this moment give any criticisms. I am satisfied with films, screen, and machine.

3. Our experience with the projector, the silver screen, and the reels supplied by your division has been so extraordinarily profitable and pleasant that there seems to be nothing in the way of constructive criticism to be offered in addition to the comments already made on Form S265. We find the motion picture outfit an invaluable teaching aid because it imparts to impressions a vividness and reality not obtainable in any way other than by immediate physical contact. So far as we can determine, the machine and all the material used have been without technical fault. The school faculty—all feminine gender—find it very convenient to handle and easy to operate. They are elated by their success in its use.

4. I am pleased to report very favorably upon the motion picture equipment recently placed in my school. We receive our film on Tuesdays, and a teacher-representative from each grade section makes inquiry on Wednesday morning concerning the presence in the school of films and slides adaptable to the coming week's work. In this way the material is used up to a maximum of its usefulness.

The machine itself is a simple, yet wonderfully efficient projector. We have had no trouble with it, and eight or ten teachers now know how to operate it without assistance.

5. My teachers have been very much pleased with the operation of the small classroom motion picture machine. The reels which we have had have been most satisfactory. A sharply defined picture has been splendidly developed in each case. We experience no difficulty whatever with excess of light in rooms with northern exposure, but those with southern exposure should be equipped with dark shades. I hope that the time will come when every classroom will be fitted with an outlet so that the work will not be interrupted when a room is needed for visual work. Are there any films of historical plays which would be suitable for our history work? A historical novel gives a knowledge of background, atmosphere, color, and life to the study of history which can be obtained in no other way.

Reports from higher schools—In concluding this group of typical reports from principals, it seems only fair to present two letters from higher schools where the 16 mm. machines were used this year. All these schools are also equipped with standard auditorium machines and booths, and therefore have had an excellent opportunity to compare the two types of projectors (the 35 mm. and the 16 mm.) in actual operation under the same educational and mechanical management. They write as follows:

1. The teachers of the Normal School faculty, as well as those of the Stevens School of Practice, have used the 16 mm. machine with entire satisfaction. We have even found it fairly satisfactory in rooms not equipped with dark shades. We expect to extend the use of this material as fast as we have opportunity to instruct our teachers in its use, and as the number of film subjects is extended. The teachers who have used the new equipment are enthusiastic over the results obtained.

2. I am glad to report favorably upon the 16 mm. films which I have been using. It is too bad they are not longer. We could use more films on mineralogical and geological subjects, such as a reel on the formation of limestone caverns of the Luray type. A good library of films on Latin America would appeal to our language department too.

CONCLUSION

While the standard motion picture equipment still has an important place in the higher schools of Philadelphia, the 16 mm. equipment is beginning to have an even wider field of service. The classroom projector appears to be well suited to a type of work for which the standard equipment has proved inadequate. It seems likely that the small projector will permit the closer correlation of films with regular class work, will be operated more readily by many teachers of both sexes, and will not encroach upon the field covered by the 35 mm. machine, at least for some time to come. The advantages of the 16 mm. machines, as revealed by the reports of those who have used them during the past few years in Philadelphia, may be summarized as follows:

1. They have the merits of safety, economy, and simplicity.
2. They approach the ideal of proper pedagogy by their use of lesson plans and of projection within the classroom.
3. They relieve the school of practically all booth and license problems.
4. They offer fewer roster complications, and better correlation with courses of study.
5. They develop greater interest and more direct motivation in instructional material hitherto untouched by motion pictures.

As a result of these favorable criticisms it is hoped that Philadelphia may complete a program of gradual installation of 16 mm. machines. Pittsburgh has already completed such a program, while New York City and Newark, other near neighbors, have begun the process of gradual placement. At the same time, the sixty-two 35 mm. machines will be serviced and supplied with the best possible film library, but it seems unlikely that any new standard machines will be purchased except for new higher schools.

EDUCATIONAL RESEARCH has made many contributions to the efficiency and economy of practically every phase of education. The curriculum, methods of teaching, administrative procedures, and finance owe much to the findings of research studies. It is therefore surprising to find that so little real research has been done in the field of school buildings and physical equipment. The explanation may lie in the fact that in the past, and to a great extent at present, the process of education has been largely a sitting-at-a-desk one with the major emphasis on textbook study. As a result, buildings and equipment facilities were given slight consideration. The broadening curriculum, the more active methods of learning, and emphasis upon doing and working with things rather than merely studying books—all have focused attention upon the importance of the physical environment and the supply of materials necessary for this changed type of work.—Holy, T. C., in *Review of Educational Research,* October 1935, p. 406.

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CHAPTER X

A REVIEW OF THE TECHNICS OF APPRAISAL[1]

THE PRECEDING CHAPTERS have dealt principally with methods and results of appraisal in specific school situations. Most of the contributors have told how certain technics were used, or may be used, in evaluating particular aspects of the school program. While supervisors and teachers may profit from studying these reports of individual appraisals, they will wish also to obtain a unified view of the characteristics, uses, and limitations of the research procedures which are available for school evaluation. This chapter undertakes to present such a picture briefly and with a minimum of technical detail.

The following discussion is not intended to be exhaustive. Its purpose is to provide a general background rather than specific directions—to suggest useful procedures rather than to prescribe a definite program of appraisal. References to more extensive and detailed treatments of the technics of evaluation are given in footnotes and at the end of the chapter.

INFLUENCE OF IMPROVED TECHNICS UPON SCHOOL EVALUATION

As recently as three or four decades ago, appraisal of the elementary-school program gave little concern to either school or community. Neither educators nor laymen had become aware of many problems relating to the schools which stood in sore need of investigation. Efforts at measurement and evaluation were limited generally to an occasional written examination, and to a still less frequent visit by a school trustee to see how the school was "getting on." Such unsystematic efforts were regarded as satisfactory by both the officers and the patrons of the school. The teacher of that day was confident that when she marked a history paper 88.3 percent, she had stamped it with its true value. Likewise, the school trustee who casually observed classes for an hour or so felt entirely qualified to report to his fellow trustees upon the efficiency of the teacher and the progress of the school. So year after year traditional practises—the worthless or harmful along with the good—passed unquestioned.

There were many reasons, no doubt, for this uncritical attitude with regard to school policies and procedures. One of these was the age-old tendency to accept unresistingly whatever has the sanction of time and tradition, but a far more cogent reason was that no reliable methods

[1] Prepared for the Editorial Committee by the Research Division of the National Education Association.

for studying many school problems were available. Penetrating and extensive studies were not made because no one knew definitely how to undertake them. Standardized tests, rating scales, and score-cards had not yet been devised, while controlled experimentation and the processes of statistical analysis had not been applied to the field of education.

The recent development of instruments with which to measure and evaluate has been the chief stimulus to educational research. McCall says: "The very process of research stirs up a hornet's nest of insistent problems. Spencer expressed a profound truth when he said that if we enlarge ever so little the sphere of light we increase infinitely its points of contact with the darkness." [2] Since the turn of the century the undisturbed complacency with schools which had prevailed thruout our entire educational history has been severely disrupted, and every phase of school activity, from the administration of the system to the achievement of the smallest child in the kindergarten, has been measured and evaluated with more or less accuracy. The amount of educational investigation has reached astonishing proportions. Brownell says: "For three decades, at an ever increasing tempo, the results of educational research have been accumulating. The sheer bulk of research literature is now in 1935 little short of astounding." [3] Gray points out that the fifty studies of reading published by 1910 had increased to 1500 by 1936.

The early investigations of the psychologist in his laboratory played no small part in bringing to educators the scientific technics which had first been applied in the physical sciences.[4] Laboratory studies of the learning process and of the nature of the child produced theories which required testing under schoolroom conditions. Teachers, school administrators, and other field workers borrowed certain technics from the psychologists, adapted them to school conditions, and added others of their own creation as the need arose.

Marked changes both in character and frequency of use become evident when early research technics are compared with those in use today, altho much research in all social fields is still primitive in character. However, progress is evident. Older research technics have been refined and new ones devised. Franke and Davis [5] analyzed the kind and amount of scientific research in education during a period of forty years, as reported in representative periodicals. They found the greatest increase to have been in the use of statistics, and that this increase has

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[2] McCall, William A. *How To Experiment in Education.* New York: Macmillan Co., 1923. p. 8.
[3] Brownell, William A. "The Field Worker as a Consumer and Producer of Research." *Journal of Educational Research* 29: 144-49; October 1935.
[4] See: Gates, Arthur I. "Contributions of Psychological Research to Education." *School and Society* 31: 485-93; April 12, 1930.
[5] Franke, Paul R., and Davis, Robert A. "Changing Tendencies in Educational Research." *Journal of Educational Research* 23: 133-45; February 1931.

been most marked in the last twenty years. There has also been an increased application of the experimental method. The questionnaire experienced its greatest popularity in the earlier decades. A finding of special interest to elementary-school teachers and principals is that more research studies have been made in the elementary school than at any other level, and the largest proportion of this research has been for purposes of evaluation. Today, evaluation has come to be regarded in many quarters as an integral part of the elementary-school program.[6]

TYPES OF TECHNIC EMPLOYED

Evaluating the many aspects of the school program requires the application, at one time or another, of practically every research technic that has ever been devised for the study of educational problems. There are no research procedures which are exclusively "technics of appraisal." The methods described here are used to investigate many types of school problems, evaluation being only one purpose for which they may be employed. However, some technics of research are better adapted than others to problems of evaluation. The following pages are devoted principally to those technics which are regarded as most useful for appraisal in the school.

Ways of classifying research technics—There are several bases for classifying appraisal procedures. They may be classified according to the device used to gather the data, such as the questionnaire or the testing technic; according to the character of the data gathered, such as objective or subjective data; or according to the purpose for which the study is made, such as to determine status or causes and relationships. Each of these classifications is convenient at times. For the purpose of this chapter, the technics most widely employed in evaluating the school are broadly classified according to the specific purpose which they serve, as follows: (1) the survey method, used to determine present conditions, (2) the experimental and correlational methods, used to determine relationships and to study cause and effect, and (3) the historical method, for use in the analysis and interpretation of the experiences of the past.[7] The case-study and genetic methods also may contribute to the appraisal of an educational program. They are, however, better suited to the analysis of a variety of factors in the lives of individual children

[6] For an illustration of this point of view in the field of the curriculum, see: Caswell, Hollis L., and Campbell, D. S. *Curriculum Development*. New York: American Book Co., 1935. 600 p.

[7] This classification is based on that given in: Good, C. V.; Barr, A. S.; and Scates, Douglas E. *The Methodology of Educational Research*. New York: D. Appleton-Century Co., 1936. Chapter 5, "The Classification of Research Methods," p. 205-58.

than to the evaluation of school procedures and materials for groups of children.[8]

Selecting methods of study—When making a selection among the available technics of research, the investigator needs first to analyze his problem and to decide which method promises results of the highest validity. Methods useful for measuring pupil achievement are not suitable for appraising curriculum content. The teacher, principal, or superintendent also needs to take into account the general school conditions. Certain practical questions inject themselves into the situation, such as: How much time can be given to this particular investigation? What facilities and assistance are available for carrying it on? What degree of refinement of measurement will be necessary? How widely will the results of this study be applied? Other problems will no doubt occur to the practical worker who realizes that his first responsibility is not research but teaching children, supervising instruction, or administering a school system.

It is well to recognize from the beginning that neither the classroom nor the school system is a laboratory.[9] This fact places certain limitations upon the experimenter, who quickly finds that his studies must be carried on under ordinary school conditions, and that these conditions are not easily controlled. However, there are compensations. The very fact that a study is made in a typical school situation may produce results which are more useful to the school than a similar study carried on under the artificial conditions of the laboratory. This is especially true of evaluative procedures. In conducting such a study, however, the possible or probable effects of uncontrolled working conditions on the outcome of the experiment should be borne in mind, and the results interpreted in the light of these conditions. Neglecting to make allowance for the influence of uncontrolled factors has been a serious weakness of many studies of classroom problems.

Objective and subjective approaches—While objectivity is an important goal of measurement in education, it is still far from being attained to the same degree by every type of measuring instrument. Yet even the most subjective type cannot be thrown aside as useless. The materials with which educators work are such that the technics which have been successful in the physical sciences cannot be applied to educational problems without careful adaptation, and generally this adaptation is in the direction of subjectivity. Many elements in the school are so highly individual in character that they cannot be stand-

[8] The value of the case-study method in school appraisal is discussed by Smith in Chapter I. An application of this method in the field of curriculum evaluation is reported by Hobson in Chapter IV.

[9] Freeman, Frank N. "The Place of Laboratory Experiment in Educational Research." *Review of Educational Research* 4: 97-107, 118-19; February 1934.

ardized; in fact, it would be undesirable to have them conform to a standard pattern. Teachers, pupils, classrooms, and even entire school systems have certain distinctive qualities and potentialities which cannot be radically changed or ignored in the process of evaluation. "Apparently, the more nearly we get to the heart of human problems, the less completely we can depend on approaches that are acceptable to those who emphasize the formal characteristics of objective science. In these areas one has to choose between loyalty to formalism and the desire to do something of practical worth, even though it is not entirely above criticism." [10]

Hence it is often necessary to use methods of appraisal which take account of individuality within the school, even tho such methods may be more or less subjective. The results obtained by these methods may not apply beyond the classroom or school system in which they were obtained, but this is no particular drawback from the field worker's viewpoint. For him the investigation has been satisfactory if it has solved a problem in the local school. In this respect the investigations of the teacher, principal, or school administrator differ markedly from those of the research worker in the laboratory. The research worker seeks to test the general truth of hypotheses and principles, whereas the field worker is interested primarily in solving the problems of his own school only.

Lack of a "best" technic—There is no research technic which can be characterized as "best." Research instruments and methods do not possess quality in themselves. The value of a particular technic depends on (1) its applicability to the problem under investigation, (2) the judgment and care with which it is applied, and (3) the wisdom with which the resulting data are interpreted. In support of this viewpoint Good, Barr, and Scates comment as follows:

> No attempt is made to characterize one method as more important than another, since the purpose to be served and the conditions to be met must determine the value of a research method in a given situation. The value of a machine gun, a rifle, a shotgun, and a revolver as a weapon must be determined in relative rather than absolute terms. The difficulty of establishing a sharp line of demarcation between fundamental methods of research and minor techniques or devices for collecting or analyzing data will be recognized; since, under the direction of an expert, what was a minor technique in a different situation or in the hands of a beginner—the case study, for example—may become a major procedure in the approach to truth.[11]

In this connection it should be noted also that most studies require the use of more than one research technic; seldom is a well-planned

[10] Good, C. V.; Barr, A. S.; and Scates, D. E., *op. cit.*, p. 410.
[11] Good, C. V.; Barr, A. S.; and Scates, D. E., *op. cit.*, p. 222.

investigation limited to one. Many studies require historical research to the extent of collecting and evaluating past investigations *as an initial step.* Practically all research finds some use for statistical methods, altho the calculations may be extremely simple. A large proportion of investigations are improved by a certain amount of experimentation. It would generally be unwise to limit a particular study to any one method.[12]

THE SURVEY TECHNIC

The survey method is the one most often used to evaluate the school program. It is so called because it utilizes data on current conditions, usually from a relatively wide area or from a large number of cases, or both. The results are expressed statistically in terms of averages, and these averages are used in making comparisons between classes, schools, or school systems. By means of the survey the average achievement of a group of pupils, the amount of training possessed by teachers, the condition of school buildings, and other facts regarding the status of the schools may be determined and compared with similar findings in other localities or with accepted standards. The study may be concentrated on a single phase of education in a single school, or it may cover all aspects of an entire school system.[13] The survey technic is not primarily concerned with relationships or with causes and effects. It is not analytical in its approach, altho it often provides data which may be subjected to analysis. It does not aim at individual diagnosis. It does, however, aid the practical worker in obtaining information basic to the intelligent formulation of school policies, and in making comparisons among schools and school systems which are essential to evaluation.

The survey method utilizes a number of data-gathering devices which may be adapted to widely varying problems and situations. Some of these, such as controlled observation, rating scales, and checklists, involve a considerable amount of subjective judgment. Others, such as standardized tests, are relatively objective. There are also, among similar devices, varying degrees of reliability according to the particular instrument used or the nature of the thing to be measured. For instance, a scale for rating character traits may be less reliable than a scale for appraising school buildings because of the difference in the problems to which the device is applied.

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[12] For a fuller discussion of types of research technics see: Barr, A. S., and others. "A Symposium on the Classification of Educational Research." *Journal of Educational Research* 23: 353-82; May 1931.

[13] For survey technics employed in state school surveys, see: National Education Association, Research Division. "Estimating State School Efficiency." *Research Bulletin* 10: 77-131; May 1932.

The survey devices most commonly used for school evaluation are: (1) the instruments of controlled observation, such as record forms, rating scales, checklists, and score-cards; (2) questionnaires and interviews; (3) standardized tests; and (4) the analysis of pertinent records. These are discussed in the order given.

Instruments of controlled observation—Observation as a method of research has, within recent years, been lifted out of the class of technics regarded as too subjective to be included among scientific procedures, and now bids fair to become a genuinely scientific method for measuring certain "intangibles" which have heretofore baffled the ingenuity of research workers. This technic is probably superior to diary and case-study procedures for certain phases of school appraisal, since the results of controlled observation lend themselves to statistical treatment more readily than do those yielded by these latter devices.

The observational technic has been refined in the following ways:

1. The things to be observed are carefully defined and limited in quantity.
2. Observations are made systematically. The length of the observation period, the intervals of time between observations, and the number of observations are definitely determined.
3. The number of instances of the type of activity which the observer is studying is recorded immediately. Nothing is left to memory.
4. The observations are made by one trained to do this work.
5. The results are recorded in such a way that they can be checked and verified. Special forms for recording observations are used.[14]

Obviously, the success of this method depends largely upon the care with which its administration is planned, the clear definition of activities so as to leave a minimum to the judgment of the observer, the arrangement for recording observations, and the training of the observers.

Altho controlled observation has been developed largely in answer to the need for an effective method of studying the behavior of very young children,[15] it is becoming an additional technic for measuring the larger outcomes of the school, such as the development of character and personality traits. It is also of value in appraising the work of various types of schools, such as the traditional and the progressive school.[16] Observation can become a highly effective experimental method if such conditions as the classroom and its equipment, the groups of pupils, and

[14] For a comparison of systematized and unsystematized observation, see: Goodenough, Florence L., and Anderson, John E. *Experimental Child Study.* New York: Century Co., 1931. p. 428-29.

[15] For illustration of this use of the observational technic, see: Jack, Lois M. "An Experimental Study of Ascendant Behavior in Preschool Children." *Behavior of the Preschool Child.* Studies in Child Welfare, Vol. 9, No. 3. Iowa City: University of Iowa, 1934. Part 1, p. 9-65.

[16] Wrightstone, J. Wayne. "Measuring Intangibles in Progressive Schools." *Progressive Education* 12: 95-97; February 1935. ¶ Pistor, Frederick. "Valid Scientific Appraisal of an Enterprise in Progressive Education." *Journal of Educational Research* 28: 433-49; February 1935. See also the article by Pistor in Chapter V of this yearbook.

the observers are controlled, leaving some other one factor to exert a varying influence upon the groups of pupils studied.

Rating scales, checklists, and score-cards are variations of the direct observation technic. They are based on the same assumptions: (1) that a better estimate of an object or situation can be secured by centering attention on one of its aspects at a time; and (2) that the status or value of the whole can be approximated by adding together the estimates of its parts. While there are objections to these assumptions from a theoretical standpoint, the devices themselves are of practical value in appraising many phases of the school program.

These three devices are somewhat similar in character. There are differences among them, however, which may make one more applicable than either of the others to a particular problem. These differences need to be carefully considered in the light of the investigator's purpose when one of the devices is to be selected as an instrument of appraisal.

The rating scale is the most generally used of the three. It directs attention to a number of separate items, but not to so many as the checklist or score-card. The scale may rank the persons, objects, or activities observed in order of merit, or it may provide a range of values to be assigned to them. The reliability of the results may be increased by combining the ratings made by several observers. As with the checklist and score-card, the success of the rating scale depends largely upon the care with which it is constructed and administered.

Rating scales have been extensively used for judging teacher efficiency.[17] Broadly speaking, the work of the teacher may be evaluated either in terms of processes or of results—that is, by observing actual classroom activities under the teacher's direction, or by measuring the achievement of her pupils. Ideally, pupil achievement should be the ultimate criterion of the teacher's success, but many factors other than the teacher enter into any teaching situation and condition the pupils' attainments, such as assistance received at home, and the ability, interest, and energy of the pupils. Such conditions make it practically impossible to isolate and measure the teacher's influence by testing the pupils only. It is therefore necessary to supplement achievement tests by other devices, such as the rating of teaching procedures.

However, the measurement of teaching ability by means of rating scales, even when supplemented by tests of social intelligence, health scales, personality measurement, and other psychological tests, has been far from satisfactory,[18] altho it is superior to the casual, unaided

[17] Knudsen, C. W. *Evaluation and Improvement of Teaching.* Garden City, New York: Doubleday, Doran and Co., 1932. p. 205-48. ¶ Torgerson, T. L. "The Measurement and Prediction of Teaching Ability." *Review of Educational Research* 4: 261-66, 329-30; June 1934.

[18] Barr, A. S. "The Measurement of Teaching Ability." *Journal of Educational Research* 28: 561-69; April 1935.

judgment of untrained observers. Much remains to be done in this field. Controlled observation of the type outlined above, including the use of carefully prepared checklists of activities to be observed, offers perhaps a more promising approach to the appraisal of teaching efficiency.[19]

Checklists usually contain many details, since their chief purpose is to call attention to points which might easily be overlooked. They are often more useful as a starting point for study than as a means of evaluation. They may be made to yield a total score by assigning values to the various points listed, but in such cases they are usually called "score-cards." Checklists are used for appraising school property,[20] the business administration of schools,[21] instructional activities,[22] and supervisory policies. [23] Such devices have also been an important means for evaluating textbooks.[24] A more recent development in the use of the checklist is the measurement of group discussion.[25]

The score-card is the most elaborate form of direct rating. It usually contains a considerable number of items, each of which is assigned a definite maximum number of points. Examination of available score-cards reveals a variety of ways of determining the values to be assigned for each item. These instruments yield total scores which make possible comparisons among the objects or situations appraised. They have been found especially useful in the appraisal of school buildings.[26] Score-cards have also been developed for the school budget,[27] school records and reports,[28] guidance activities,[29] and school organization.[30]

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[19] The rating scale has also been used for evaluating courses of study. For example, see: Stratemeyer, Florence B., and Bruner, Herbert B. *Rating Elementary School Courses of Study.* New York: Teachers College, Columbia University, 1926. 193 p.

[20] Smith, Henry Lester, and Noffsinger, Forest Ruby. *Bibliography of School Buildings, Grounds, and Equipment.* Parts II and IV. Bulletin of the School of Education, Vol. 9, No. 2 and Vol. 11, No. 2. Bloomington, Ind.: Indiana University, 1933 and 1935. "Score Cards and Building Equipment," Part II, p. 40-42; and Part IV, p. 32-35.

[21] Linn, H. H. "Check Lists for Determining Possible Economies in Public School Administration." *American School Board Journal* 87: 31-32, 62-63, July; 31-32, 59, August; 43, 59, September; 32, October; 41, 54-55, November 1933.

[22] Wrightstone, J. W. "Measuring Intangibles in Progressive Schools." *Progressive Education* 12: 95-97; February 1935.

[23] Barr, A. S. *Introduction to the Scientific Study of Classroom Supervision.* New York: D. Appleton and Co., 1931. Chapter 5, "The Validation of Data-Gathering Devices," p. 190-248.

[24] For a critical review of technics used for evaluating textbooks, see: Buckingham, B. R. "Scientific Textbook Appraisal Is Essential." *Nation's Schools* 12: 45-48; July 1933. See also the articles by Averill and Waterman in Chapter IX of this yearbook.

[25] Wrightstone, J. Wayne. "Instrument for Measuring Group Discussion and Planning." *Journal of Educational Research* 27: 641-50; May 1934.

[26] Score-cards have been developed for rating rural-, elementary-, and high-school buildings of various kinds by research workers at Teachers College, Columbia University, New York City.

[27] Clark, Harold F. "Suggestions for Scoring School Budgets." *American School Board Journal* 71: 47-48, 133-34; October 1925.

[28] Strayer, George D., and Engelhardt, N. L. *A Score Card and Standards for the Records and Reports of City School Systems.* New York: Teachers College, Columbia University, 1923. 81 p.

[29] Proctor, W. M. "Evaluating Guidance Activities in High Schools." *Vocational Guidance Magazine* 9: 58-66; November 1930.

[30] Mort, Paul R. "Rating Scale for Elementary-School Organization." *Teachers College Record* 32: 34-49; October 1930.

Questionnaires and interviews—These instruments are used to obtain data which are unique, that is, data which can be secured from certain individuals only. The interview secures information directly by means of face-to-face contacts, while the questionnaire usually obtains information from persons who are distributed over a relatively wide area. The questionnaire is, in a manner of speaking, a long-range interview. Both have advantages and disadvantages. One disadvantage common to both is that the person making the inquiry is entirely dependent upon the individual from whom the information is secured for the truth and validity of the answers given. Even when the person responding is willing to cooperate, a chance ambiguity in a question may produce a "wrong" answer.

The interview has all the advantages of close-range conversation; misunderstandings may be immediately cleared up. This procedure is time-consuming and expensive, however, and few cases generally can be included.[31] The questionnaire, on the other hand, may more readily reach a large number of people. Its convenience as a research device has caused it to suffer from over-use and from misuse. Often it has been used to collect data which could better have been secured from public documents and records. Perhaps its most serious misuse is in obtaining opinions on questions which can be answered adequately only thru carefully conducted experiments.[32]

Davis and Barrow [33] analyzed 500 questionnaire studies reported in six educational periodicals during a period of thirty-eight years. The analysis included (1) the number of questionnaires sent out and returned, (2) the types of responses called for, (3) the types of approach used in obtaining replies, (4) the reliability of responses, and (5) the validity and types of items. The investigators concluded that practically nothing has been scientifically established concerning the reliability and validity of the questionnaire, and suggested that serious attempts be made to determine these, rather than allow the questionnaire to be discredited as a research technic.

Survey testing—The administration of school tests is perhaps the best-known method of evaluating the school program. Tests have long been given to groups of pupils for the purpose of measuring their achievement in the school subjects. The efficiency of the teacher, of

[31] For further information on the interview, see: Bingham, Walter V., and Moore, Bruce V. *How to Interview*. Rev. ed. New York: Harper and Bros., 1934. 308 p. ¶ Hartmann, George W. "Interview as a Research and Teaching Device." *Journal of Applied Psychology* 17: 205-11; April 1933.

[32] For further discussion of the questionnaire, see: Koos, Leonard V. *The Questionnaire in Education*. New York: Macmillan Co., 1928. 178 p. ¶ National Education Association, Research Division. "The Questionnaire." *Research Bulletin* 8: 1-51; January 1930.

[33] Davis, R. A., and Barrow, E. L. "A Critical Study of the Questionnaire in Education." *Educational Administration and Supervision* 21: 137-44; February 1935.

the principal, and of the school system as a whole is often estimated in a general way according to the achievement of the pupils on tests.[34] Standardized tests have made possible the comparison of different classes, schools, and entire school systems, as well as the comparison of each of these with the general test norms.[35] The examinations used may include tests of ability as well as of achievement, in order to make the scores on the latter more meaningful. While carefully selected standardized tests can be highly useful, considerable caution must be exercised in interpreting their results. Monroe [36] warns against "a child-like faith in the efficacy of objective tests as instruments for measuring school achievement." He believes that too great reliance is being placed on tests as measures of such highly important matters as the school's efficiency and the pupil's readiness for graduation, and as bases for educational changes. He emphasizes the necessity for a more intelligent attitude if educators are to prevent an uncritical and extreme distrust of tests. It is especially important that there be close agreement between the tests used and the specific educational objectives of the school using them.

Analysis of records—Available school records often play an important part in school appraisal. For example, a superintendent of schools may summarize records of educational costs or of teachers' salaries in his school system during a period of years, and may compare these with similar summaries from other school systems. A school principal or teacher may summarize records of the educational and personality growth of children in his school or classroom, and may compare these with similar records compiled by other schools in the same system or with norms based on the development of pupils in similar schools elsewhere. Obviously, much of the information obtained from records must be collected originally by means of the devices mentioned earlier, such as checklists, score-cards, rating scales, questionnaires, interviews, and survey tests. As in the case of these other devices, the usefulness of records in school appraisal depends in large measure upon the educational significance of the data which they provide. Record systems themselves should be frequently appraised with reference to

[34] Knudsen, Charles W. *Evaluation and Improvement of Teaching.* Garden City, New York: Doubleday, Doran and Co., 1932. Chapter 8, "Evaluation of Instruction by Means of Standardized Tests," p. 285-320. ¶ Barr, A. S. "Measurement in the Supervision and Improvement of Teaching." *Twenty-second Annual Conference on Educational Measurements.* Bulletin of the School of Education, Vol. 12, No. 1. Bloomington, Ind.: Indiana University, 1935. p. 25-31.

[35] For examples of extensive survey-testing programs, see: Sangren, Paul V. "State and National Testing Programs." *Review of Educational Research* 5: 456-58; December 1935. ¶ National Education Association, Research Division. "Estimating State School Efficiency." *Research Bulletin* 10: 78-131; May 1932. "State-Wide Achievement Testing Programs," p. 97-100.

[36] Monroe, W. S. "Hazards in the Measurement of Achievement." *School and Society* 41: 48-52; January 12, 1935.

this criterion. The value of records is increased by making them continuous and cumulative from year to year.

In using records for appraisal purposes, allowance must be made for all possible factors which may be responsible for the relative status of different classes, schools, or school systems. Records in themselves are meaningless for evaluation; only thru careful interpretation can they be made to throw light on the adequacy or inadequacy of specific phases of the school program.

THE EXPERIMENTAL METHOD

According to Monroe and Engelhart, experimentation is "the type of educational research in which the investigator controls the educative factors to which a child or group of children is subjected during the period of inquiry and observes the resulting achievement." [37] Experimentation is theoretically more scientific in its approach and procedure than are other research technics. It is the method most favored by investigators in the physical sciences; it is well adapted to laboratory conditions; and it has generally been regarded as the ultimate objective of investigators in all fields.

However, the experimental method has not entirely fulfilled the optimistic expectations of its proponents in the field of education, chiefly for this reason: Its success rests primarily on the principle of the "single variable." That is, all the factors in the situation under investigation must be held constant except the one whose influence is to be measured. In the typical school it is almost impossible to control *all* factors. Variations in the abilities and interests of the pupils, in the personalities of the teachers, in the general school situation, and in the out-of-school conditions may exert unmeasured and even unrecognized influences. Yet it is more important to evaluate methods of teaching in a typical classroom than in a laboratory. In reporting experimental studies carried on in such classrooms, it is important that the operation of uncontrolled factors be recognized and recorded even if it is not possible to measure their influence. Bixler [38] suggests that "the experimenter should make plans for keeping an experimental log or record of events, with dates, and should include irrelevant factors and unusual conditions."

There are other differences between the work of the laboratory investigator and that of the teacher or principal who undertakes the experimental study of problems in the schoolroom. The latter is gen-

[37] Monroe, W. S., and Engelhart, M. D. *Experimental Research in Education.* Bureau of Educational Research, Bulletin No. 48. Urbana, Ill.: University of Illinois, 1930. p. 15.

[38] Bixler, Harold H. *Check Lists for Educational Research.* New York: Teachers College, Columbia University, 1928. p. 16.

erally concerned only with obtaining results which are valid in the local situation; the laboratory study usually aims at generalization. Waples and Tyler make a distinction between the typical research problem and the typical field or service problem as follows:

> In general, the service problem differs from the research problem in that (1) the service problem is larger in scope, (2) it arises in a particular classroom but need not be confined in it, (3) it necessitates less precise methods of investigation if solutions are to be promptly obtained for the problem as a whole, and (4) it can only be investigated by the average classroom teacher on the basis of various assumptions that can seldom be verified.[39]

The service study represents a method of investigation that is more systematic than ordinary thinking, but less systematic and carefully controlled than the research study. McCall thus cautions those who would use the experimental method:

> An experimenter ought to think through his experiment from the conception of the problem to the formulation of the conclusions and beyond. If he has six months to devote to an experiment he can, with advantage, spend five months in planning the experiment and one month in conducting it. Ideally an experimenter should not start his experiment until he has gone through, mentally at least, every step even down to the smallest statistical detail.[40]

An experimental investigation may be so organized that the reactions of only one group of pupils is studied, or it may utilize parallel or rotated groups. The next few paragraphs describe briefly these variations in experimental procedure.

The one-group technic—The essentials of the one-group technic are: (1) an initial test, (2) the application of an experimental factor, and (3) observation of the results, which may range from casual subjective evaluation to highly objective measurement with the aid of instruments. This cycle may be repeated as many times as are necessary to complete the experiment. One-group experimentation is the simplest and most feasible of all experimental procedures for use in the classroom; at the same time it is probably the least valid. Bixler states: "The one-group experimental method is valid where the change produced by an experimental factor is not conditioned significantly by any preceding factor, and where the change effected by each experimental factor is measurable in equal units." [41]

The parallel-group technic—This procedure attempts to overcome the limitations of the one-group method. It requires two or more groups as nearly equivalent as possible on certain essential factors. When two groups only are used, the experimental factor is applied to one group while the other group, acting as a "control," follows the usual plan of

[39] Waples, Douglas, and Tyler, Ralph W. *Research Methods and Teachers' Problems.* New York: Macmillan Co., 1930. p. 9.
[40] McCall, William A. *How To Experiment in Education.* New York: Macmillan Co., 1923. p. 6.
[41] Bixler, Harold H., *op. cit.*, p. 16.

activity for purposes of comparison. The technic may be varied to include three or more equivalent groups, in which event the experimental factor or factors are applied to two or more groups, while the remaining group serves as a control.

The chief disadvantage of the parallel-group technic arises from the almost insuperable difficulties involved in securing the equivalence of groups. When large numbers of pupils are included in a study, chance selection may be used to equate the groups. However, few teachers or principals have pupils in sufficiently large numbers to justify the use of chance selection. Where pupils must be carefully selected, the particular factors upon which the groups should be equated depend first of all on the nature of the problem to be studied. For example, if the study is one of academic achievement, it is essential that mental age, chronological age, and past achievement in the school subjects be among the equalizing factors. On the other hand, if the experiment is concerned with physical attainment, certain measures of physical capacity and efficiency will be needed as bases for equating the groups. It should be noted that, in order to secure genuine equivalence of groups, they must have similar means and similar variabilities above and below the means. Each individual in one group may be "matched" with an individual in the other group or groups. However, the groups do not need to be equal in size.

Bixler suggests that one or more of the following bases may be used in equating groups:

1. Random selection
2. General ability
3. Initial status in the experimental trait
4. Composite of several test scores
5. Rate of growth or change in the experimental trait
6. Multiple bases, such as chronological age, mental age, and initial status.[42]

The rotation technic—The plan of rotating the experimental and control groups has been developed with a view to overcoming the limitations of the parallel-group method. As pointed out above, the difficulty in using the latter method is to secure genuine equivalence of the groups included in the experiment. The rotation technic does not require such a high degree of equivalence as the parallel-group method, because the groups are reversed at intervals so that the original experimental group becomes the control group and vice versa. However, the equating of groups cannot be totally ignored even in using the rotation method. While the measures for determining equivalence need not be so exact as when parallel groups are used, there should be reasonable equality between the groups at the beginning of the experiment.

[42] Bixler, Harold H., *op. cit.*, p. 19.

The rotation technic is subject to the same limitation as the one-group method; that is, there may be a carry-over effect from one teaching procedure to another. The technic is valid where the change produced by one teaching procedure or type of pupil activity is not conditioned significantly by any preceding method of teaching or type of activity.

A major limitation of the experimental method—Controlled experimentation has been the chief technic used in appraising methods of teaching and learning. While results of unquestionable value have been obtained, too many studies of the same factors have reported findings which are in conflict, to encourage acceptance of the validity of all studies employing this method. Some of the difficulties involved in applying the experimental technic to classroom problems were pointed out above. Errors of measurement may be added to these. But a still greater difficulty is inherent in the type of problem to which the technic is applied; that is, methods of teaching cannot be rigidly standardized. This point should be considered in evaluating the findings of studies of teaching methods as guides to future action. It is probably a vain search to try to find a *best* method of teaching even within relatively narrow fields of learning. The effectiveness of any method is conditioned by the personality of the teacher, her enthusiasm for the method she employs, the abilities of the pupils, and many other factors. As Monroe points out, "the superior teacher is resourceful and constantly adapts her instruction to the needs of her pupils as they are revealed from day to day. A method that is best today may not be best next week. A method that is best for one class may not be best for another." [43] Experimentation undoubtedly has had a stimulating effect on the work of teachers, and has contributed much to our knowledge of learning processes. Yet the conclusions derived thru experimental research into methods of instruction should be regarded critically, and as subject to revision in the light of everyday experience in the classroom.[44]

[43] Monroe, Walter S. "Controlled Experimentation as a Means of Evaluating Methods of Teaching." *Review of Educational Research* 4: 36-42; February 1934.

[44] For further discussion and illustration of the experimental method, see: Brownell, W. A. "Some Neglected Safeguards in Control-Group Experimentation." *Journal of Educational Research* 27: 98-107; October 1933. ¶ Douglass, H. R. "Scientific Investigation of Instructional Problems." *Journal of Educational Research* 29: 130-38; October 1935. ¶ Gates, Arthur I. "Experimental and Critical Appraisals of Certain Progressive Methods in Education." *Nineteenth Annual Conference on Educational Measurements.* Bulletin of the School of Education, Vol. 9, No. 1. Bloomington, Ind.: Indiana University, 1932. p. 37-48. ¶ Melby, E. O., and Lien, Agnes. "A Practicable Technique for Determining the Relative Effectiveness of Different Methods of Teaching." *Journal of Educational Research* 19: 255-64; April 1929. ¶ National Education Association, Department of Elementary School Principals. *Aids to Teaching in the Elementary School.* Thirteenth Yearbook. Washington, D. C.: the Department, 1934. Chapter X, "Summary of Research," p. 433-54. This chapter describes a number of experimental procedures used in the appraisal of teaching aids.

THE HISTORICAL METHOD

Values—Of the three kinds of research reviewed in this chapter, the historical method probably has been applied least often to problems of school evaluation. Altho one of the earliest methods of research in education, it has been largely displaced in recent years by the survey and experimental technics. The fact that many of the early historical studies were little more than collections of information has perhaps tended to discourage the use of the method by practical school workers. The functional value of carefully related historical facts was formerly little recognized, so that no special attempt was made to throw light on prevailing educational or social conditions. However, the possibilities of historical research as a means of evaluating phases of the school program which are not easily investigated by either experimental or survey methods are coming to be recognized. Knight points out the value of historical research to the school as follows:

> Much of the work of the school is traditional. The nature of the work of the teacher and the school administrator is restrictive and tends to foster prejudices in favor of familiar methods. The history of education is the "sovereign solvent" of educational prejudices. . . .
>
> Only in the light of their origin and growth can the numerous educational problems of the present be viewed sympathetically and without bias by the teacher, the school administrator, or the public. . . .
>
> The history of education is an ally in the scientific study of education rather than a competitor. It serves to present the educational ideals and standards of other times, and it enables social workers to avoid the mistakes of the past.[45]

Historical research, then, is valuable in (1) establishing trends, (2) instituting comparisons, and (3) finding causes and reasons.[46] To the appraisal of such phases of education as plans of school organization, administrative and supervisory procedures, and the curriculum, historical research can contribute by giving perspective and emphasis. The light of long experience, shed on many problems which seem new and perplexing to our generation, often reveals that such problems are as old as the race itself and are not easily brought to solution by the naive if ingenious panaceas which are suggested daily.[47]

Requirements—The historical approach to educational problems, like the other approaches described above, requires the collection,

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[45] Knight, E. W. *Education in the United States.* Boston: Ginn and Co., 1934. p. 38.

[46] Good, H. G. "The Possibilities of Historical Research." *Journal of Educational Research* 29: 148-53; October 1935.

[47] For information on the use of the historical method, see: Alexander, Carter. *How to Locate Educational Information and Data.* New York: Teachers College, Columbia University, 1935. 272 p. ¶ Good, H. G. "Historical Research in Education." *Educational Research Bulletin (Ohio State University)* 9: 7-18, 39-47, 74-78; January 8 and 22, and February 5, 1930. ¶ Hockett, Homer C. *Introduction to Research in American History.* New York: Macmillan Co., 1931. 168 p. ¶ Reisner, Edward H. "The History of Education as a Source of Fundamental Assumptions in Education." *Educational Administration and Supervision* 14: 378-84; September 1928.

evaluation, organization, and interpretation of data. The student of history, according to Good,

> gathers data industriously, of course, but also resourcefully, noting particularly any facts which might tend to controvert his preformed views, all unpleasant and unwelcome evidence, scrutinizing any discrepancies and disagreements, and keeping a sharp eye for circumstances previously unnoticed or neglected. He looks not only for facts but for clues. Facts must lead to ideas. He must respect the facts, but in themselves they are blind. He must draw conclusions, because he aims not at knowledge merely, but wisdom. "What we need to know, for most purposes, is not what happened in the past, but what may be expected to happen in the future." Of this latter kind of knowledge, one important source is correct ideas of the past.[48]

The usefulness of historical research in curriculum study is pointed out by Judd:

> Curriculum research is, I think, perhaps more difficult than most other types of educational investigation. Unless educational officers can look beneath the surface and find fundamentals, they certainly should accept what tradition hands down. Tradition has the sanction of time and trial and is far safer than mere guesswork. . . .
>
> Research workers should be critical and patient. They should approach their tasks with a clear understanding that arduous inquiry is necessary to success. They should study the trends of civilization. A trend is much more important to understand than is any particular content of thought or any particular skill. It is more important to know how to cultivate industrious and precise modes of thinking than it is to catalogue particular school subjects or particular items of experience. Knowledge of a trend of civilization carries the educator forward. It gives him a standard of selection, a guiding principle. It indicates to him the lines of development through which civilized society has arrived at its present stage. Such knowledge will lead to the organization of a progressive curriculum rather than to the acceptance of a curriculum composed of static units.[49]

Loomis [50] suggests that curriculum research which involves the historical method is made difficult by lack of adequate sources. This is equally true of many other phases of education. He adds, "Aside from textbooks and courses of study, historical research requires well-kept records of actual teaching procedures. Such records are seldom kept, even in the laboratory and experimental schools. Possibly no more important service could be rendered by master teachers than by the keeping of complete records of the teaching actually done." The same writer describes such a plan of record-keeping and its use in curriculum evaluation in the University of Chicago Laboratory Schools.

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[48] Good, H. G. "The Possibilities of Historical Research." *Journal of Educational Research* 29: 148-53; October 1935. The quotation by Good is from Drake Durant's *Invitation to Philosophy*. Boston: Houghton Mifflin Co., 1933. p. 67.

[49] Judd, Charles H. "The Place of Research in a Program of Curriculum Development." *Journal of Educational Research* 17: 313-23; May 1928.

[50] Loomis, A. K. "Needed Research in the Curriculum." *Journal of Educational Research* 29: 126-30; October 1935.

INCREASING THE USEFULNESS OF APPRAISAL TECHNICS

Thinking clearly—The above discussion has been centered on the manipulative technics and devices of school evaluation. Nothing has been said about the contribution of the philosophical approach to appraisal; yet the value of any research study depends ultimately upon reflective thinking and subjective judgment. The application of even the most scientific technics must be preceded by the selection of a problem and by the formulation of hypotheses, and it must be followed by interpretation of the information collected. Both of these steps require thought and judgment. No mechanical device can determine the problems which stand most in need of investigation in a particular school situation. As Holmes points out, "We do not know what to be scientific about until we have thought carefully on the issues involved, so that our experimentation and our gathering and handling of statistical data may give us facts on the questions that really matter";[51] and Brim adds, "The careful selection of problems in terms of their significance for human well-being and happiness is of basic importance in research. In the main, the research worker in education has been without vision—a slave of conventional education. He has improved and polished its practices but he has not challenged its fundamental assumptions."[52]

Within recent years it has become apparent to many persons that too much emphasis has been given to the manual processes of research, and too little to the intellectual aspects. In other words, there has been too much handwork and too little brainwork. Voluminous quantities of information have been collected by means of questionnaires and standardized tests, but often the meaning of these data has evidently been little comprehended by the investigators themselves and consequently they have been clumsily or incorrectly interpreted to other people. Intelligence, especially that variety known as "common sense," is essential to research, and no mechanical device, however efficient, can take its place.

Approaching problems simply—In these considerations there is a note of encouragement to teachers, principals, and other field workers. It is this: The seeing eye and the thinking mind are still of greater value in research than is the most generously equipped laboratory. Those whose first duty is teaching, supervising, or administering a school, and who have but little time for research, are likely to feel overwhelmed by the array of highly technical processes which seem to be employed in studying even the simplest problems. The air is so

[51] Holmes, Henry W. "The Philosophic Element in Scientific Method." *School and Society* 41: 41-48; January 12, 1935.

[52] Brim, O. G. "Orientation of Educational Research to Present-Day Science and Philosophy." *Educational Research Bulletin (Ohio State University)* 13: 29-38; February 14, 1934.

filled with coefficients of correlation, reliabilities of differences, measures of central tendency and variability, the rotation technic, and the like, that the practical worker is in danger of being utterly confused. While these measures and devices are important, it clears the atmosphere somewhat to reflect that some of the finest contributions of pioneer research were made either with no laboratory equipment whatever or with only crude tools, often made by the research worker himself. Pasteur, when experimenting on diseases of grapes, used an old room that had once been a cafe, apparatus contrived by a carpenter and a tinsmith, and an open charcoal brazier with a pair of bellows and water from the town pump. Such instances could be multiplied indefinitely. Educational research is still in a pioneer stage. There is need for the investigator who can produce results with relatively crude equipment. Darwin once said:

> I have been speculating . . . what makes a man a discoverer of undiscovered things, and a most perplexing problem it is. Many men who are very clever—much cleverer than the discoverers—never originate anything. As far as I can conjecture, the art consists in habitually searching for the causes and meaning of everything which occurs. This implies sharp observation and requires as much knowledge as possible of the subject investigated.[53]

Recording activities and observations—Many educational processes must be evaluated every year—and every day, for that matter—by the teacher's judgment. The value of such informal but important appraisals depends primarily upon the acuity with which the teacher makes her observations and interprets them. Teachers can cultivate both the ability to observe and the ability to interpret their observations by reading research studies critically, and by keeping a systematic record of their own ideas, observations, and activities. If a number of competent teachers would record carefully the everyday activities of their classrooms over a period of years, and their critical reactions to these activities, they would make an invaluable contribution toward evaluating the work of the school. Such records have rarely been kept, altho they require no equipment beyond a notebook and pencil.

Adapting research technics to practical school situations—One of the greatest needs in educational research today is a better adaptation of research technics to the practical problems and conditions of the schoolroom. Who is better fitted to bring about such adaptation than competent principals and teachers?[54] These workers are in closer contact with the school's problems, and should be able to judge the applicability of research technics to these problems better, than the

[53] Quoted in: Boyd, T. A. *Research.* New York: D. Appleton-Century Co., 1935. p. 85.
[54] See: Goodykoontz, Bess. "Opportunities for the Classroom Teacher as a Research Worker." *School Life* 15: 161-63; May 1930.

research worker who is trained only in the technics themselves. The exercise of greater initiative in this matter, after careful study of the technics available, will save teachers and principals from having imposed upon them methods of school appraisal which they do not understand or in which they have little confidence. The value of any program for evaluating the school depends in no small measure upon the intelligent cooperation of well-trained principals and teachers.

THE STUDY OF EDUCATIONAL PROBLEMS ordinarily involves a certain fairly well recognized sequence of mental operations: (1) the recognition and definition of a problem; (2) the survey of past experience (recorded in books and elsewhere) with the problem under consideration for ideas about what to do; (3) the formulation, upon the basis of a preliminary survey of past experience, of certain tentative generalizations (hypotheses) about how to proceed and possible solutions; (4) the critical examination of these tentative generalizations for verifiability, logical consistency, and agreement with fact as found in past experience with the problem; and (5) a further appeal to experience made according to the conventions of science, employing better controls, more systematic observation, and better instruments of measurement, when and if necessary.—Barr, A. S., in *Journal of Educational Research,* January 1937, p. 357.

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RECORDS AND INFORMATION

The information in this section is of two types: (1) the names of officers of professional organizations in which elementary-school principals participate, and (2) the names and addresses of paid-up members of the national Department of Elementary School Principals. The list of organizations is divided into three parts: (a) local principals organizations, (b) sectional principals associations, and (c) state principals associations. While these lists are not complete, they include every organization from which up-to-date information about its officers was received in time for publication. The Department hopes that all organizations of elementary-school principals or supervisors will supply such information regularly for inclusion in future yearbooks.

The growth of membership in the national Department has continued at an accelerated pace during the current year. The number of members as this yearbook went to press was 5161, including 154 life members. This represents an increase of 1025, or 25 percent, over the membership of a year ago. This unusual increase should be a source of pride to those who have helped to bring it about. It reflects not only improved economic conditions, but also a growing spirit of unity and of professional purpose among the elementary-school principals of America. The Department wishes to serve every elementary principal and supervisor in the nation, and hopes thereby to foster better education for children, to elevate school supervision as a profession, and to improve conditions for teachers. Let us keep on growing!

LOCAL PRINCIPALS ORGANIZATIONS

In the following roster the symbol (1) is used to indicate the person reported as president and (2) is used to indicate the secretary.

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PERTH AMBOY, N. J.—PRINCIPALS' CLUB. (1) Royal R. Predmore, Fords. (2) Ingeborg Oksen, 67 Catalpa Ave., Perth Amboy.

PHILADELPHIA, PA.—PRINCIPALS' CLUB. (1) Reinhold W. Goll, Elverson School. (2) Jean M. Tweed, Hartranft School.

PITTSBURGH, PA. — PRINCIPALS' CLUB. (1) Frank A. Finley, Cowley School. (2) Irene A. Thompson, Rose School.

PLAINFIELD, N. J.—PRINCIPALS' CLUB. (1) C. V. Davis, Evergreen School. (2) E. Peffer, Maxson School.

PONTIAC, MICH.—ELEMENTARY SCHOOL PRINCIPALS' CLUB. (1) Mrs. Mabel V. Roy, 544 Bates St., Birmingham. (2) Gertrude McVean, 327 Perry St., Pontiac.

PORTLAND, OREGON—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) C. E. Perry, Lents School. (2) C. T. Thompson, Llewellyn School.

PROVIDENCE, R. I.—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Francesca DeS. Cosgrove, Doyle Ave. (2) Margaret M. Blessing, 8 Blackstone Blvd.

RACINE, WIS.—PRINCIPALS' SUB-COUNCIL. (1) F. C. Meyer, 833 Main St. (2) D. W. Miller, 1113 Park Ave.

RICHMOND, VA.—PRINCIPALS' LEAGUE. (1) C. C. Crouch, 512 N. 24th St. (2) W. Carter Bleight, 1207 Wilmington Ave.

ROCHESTER, N. Y.—COUNCIL OF ELEMENTARY SCHOOL PRINCIPALS. (1) R. Park Parkhill, 555 Plymouth Ave., N. (2) Albert H. Downey, 26 Avondale Park.

SACRAMENTO, CALIF.—CITY PRINCIPALS' ASSOCIATION. (1) Arthur Polster, Lincoln School. (2) Emma Von Hatten, Marshall School.

SAGINAW, MICH. — PRINCIPALS' CLUB. (1) Jeannette Birnie, 600 Emerson St. (2) Mayme Bastian, 1725 Topen.

SAINT LOUIS, MO.—CLUB OF WOMEN PRINCIPALS. (1) Margery M. Griffin, Clay School. (2) Susan S. Ryan, O'Fallon School.

SAINT LOUIS, MO.—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) E. A. Hood, 2504 Clifton Park Ter. (2) C. I. Fleming, 6605 Neosho St.

SAINT LOUIS, MO.—SCHOOLMASTERS' CLUB. (1) F. J. Jeffrey, 911 Locust St. (2) Thomas F. Gentry, 421 Edgewood Dr., Clayton.

SALT LAKE CITY, UTAH—PRINCIPALS' ASSOCIATION. (1) Zeta Morris, 223 W. North Temple. (2) Edith Ryberg, 841 Dowington Ave.

SAN ANTONIO, TEXAS — ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Annie Higgins, 1520 W. Travis. (2) Ruth Moynahan, 307 S. Pinto.

SANTA MONICA, CALIF.—ADMINISTRATORS' ASSOCIATION. (1) Mrs. Jenne W. Rice, 605 Idaho Ave. (2) Mrs. Una Reed Kirk, 837 19th St.

SEATTLE, WASH. — PRINCIPALS' ASSOCIATION. (1) James F. Shannon, Rainier School. (2) Grace C. Henderson, Loyal Heights School.

SIOUX CITY, IOWA — ADMINISTRATION CLUB. (1) Ragna E. Wold, 1300 28th St. (2) Bertha Finch, 3900 Sixth Ave.

SIOUX FALLS, S. DAK.—ELEMENTARY PRINCIPALS' AND SUPERVISORS' CLUB. (1) Mrs. Ben Stapleton, 503 S. Dakota Ave. (2) Rachel Newkirk, 817 W. 11th St.

SOMERVILLE, MASS.—SCHOOLMEN'S CLUB. (1) Arthur E. Peterson, 73 Lowell St. (2) Joseph B. Fitzgerald, 97 Pennsylvania Ave.

SOUTH BEND, IND.—ELEMENTARY PRINCIPALS' CLUB. (1) Lillian P. Anderson, 128 Chapin St. (2) Elmer E. Cook, 506 E. Ewing Ave.

SPOKANE, WASH.—SCHOOLMASTERS' CLUB. (1) Charles E. Canup, 1813 Mallon Ave. (2) Thorsten Berggren, E. 27 Eighth Ave.

SPOKANE, WASH.—WOMEN PRINCIPALS' CLUB. (1) Adelaide Strite, 207 23rd Ave. (2) Rosa Langley, 809 Fourth Ave.

STOCKTON, CALIF.—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Robert H. Allen, R. F. D. 1, Box 1, Lathrop. (2) A. W. McGowen, 629 N. Sutter St., Stockton.

SYRACUSE, N. Y.—MEN PRINCIPALS' ASSOCIATION. (1) Ernest J. Baldwin, Charles Andrews School. Charles V. Hartson, Onondaga Valley Academy.

SYRACUSE, N. Y. — SCHOOLMASTERS' CLUB. (1) Harold Newton, Board of Education Bldg. (2) Charles W. Bradlee, Pebble Hill School.

SYRACUSE, N. Y.—WOMEN PRINCIPALS' AND SUPERVISORS' ASSOCIATION. (1) Bertha L. Raynor, 1512 W. Colbin St. (2) Helen R. Hewitt, 817 Onondaga Ave.

TACOMA, WASH. — ADMINISTRATIVE GROUP. (1) Howard M. Carr, 3816 N. 37th. (2) Helen B. Morris, 1402 N. Fifth.

TAMPA, FLA.—ELEMENTARY PRINCIPALS' COUNCIL. (1) Ethel G. Wolverton, Jackson School. (2) Anne Hartman, Kenley School.

TAMPA, FLA.—SCHOOLMASTERS' CLUB. (1) D. W. Waters, 1016 Caracas St. (2) Raymon Cashel, 7405 Central Ave.

TOLEDO, OHIO—PRINCIPALS' AND SUPERVISORS' CLUB. (1) Philo Dunsmore, 1434 Royalton Rd. (2) Elizabeth Morgan, 2401 Hollywood Ave.

TOPEKA, KANS. — PRINCIPALS' CLUB. (1) Clifford R. Watson, 4507 W. 21st St. (2) Nellie Langford, 1161 Garfield.

TULSA, OKLA.—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Oscar C. Griggs, Whittier School. (2) Ralph H. Kennedy, Pleasant Porter School.

UTICA, N. Y.—PRINCIPALS' AND SUPERVISORS' CLUB. (1) Bertha Deane Hughes, 13 Elizabeth St. (2) Elizabeth Correy, Washington School.

WATERBURY, CONN.—PRINCIPALS' ASSOCIATION. (1) Mary E. Coyle, 17 Roseland Ave. (2) Loretta Fitzpatrick, 96 Bridge St.

WICHITA, KANS.—ELEMENTARY PRINCIPALS' CLUB. (1) Nina Burright, 422 S. Millwood. (2) Mrs. Myrtle Conger, 517 Belmont.

WILMINGTON, DEL.—TEACHERS' ASSOCIATION. (1) C. A. Fulmer, Wilmington High School. (2) Sara S. Scott, Elbert School.

YONKERS, N. Y.—PRINCIPALS' ASSOCIATION. (1) Julia Gregory, 108 Highland Ave. (2) Esther Chamberlin, 777 Warburton Ave.

SECTIONAL PRINCIPALS ASSOCIATIONS

These include organizations in counties, districts, zones and similar divisions of the states.

In the following roster the symbol (1) is used to indicate the person reported as president and (2) is used to indicate the secretary.

ALABAMA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

JEFFERSON COUNTY PRINCIPALS' CLUB. (1) Eschol S. Darden, Adamsville. (2) Mrs. C. M. Upton, Box 737, Wylam.

ELEMENTARY PRINCIPALS DEPARTMENT OF THE JEFFERSON COUNTY TEACHERS ASSOCIATION. (1) Claude C. Vines, Rt. 1, Morris.

ARIZONA—MARICOPA COUNTY ELEMENTARY SCHOOL PRINCIPALS' AND SUPERINTENDENTS' ASSOCIATION. (1) A. N. Lindstrom, Kyrene School, Tempe. (2) Charles E. Fillerup, Buckeye.

CALIFORNIA — ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

BAY SECTION. (1) Fred B. Zimmerman, Stonehurst School, Oakland. (2)

Warren Natwick, San Mateo Park School, San Mateo.

CENTRAL COAST SECTION. (1) Trammel Moore, Atascadero. (2) Alton E. Scott, San Juan Bautista.

FRESNO COUNTY ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) Mrs. Elizabeth Ramacher, 1628 White Ave., Fresno. (2) Ruth Catlin, 816 Kern St., Kingsburg.

MADERA COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) David Telfer, LaVina School, Madera County. (2) Truman Bratton, Howard School, Madera County.

MARIN COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Henrietta Crawford, Lagunitas. (2) Mrs. Dorothy Olsen, Corte Madera.

MONTEREY COUNTY ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) M. T. Joseph, 1201 Ninth St., Monterey. (2) Mrs. Emma Dennis, 209 Maple St., Salinas.

ORANGE COUNTY RURAL PRINCIPALS' ASSOCIATION. (1) Frederick T. Chemberlin, R. F. D., Anaheim. (2) Mrs. Matte Lou Maxwell, R. F. D., Anaheim.

SAN BERNARDINO COUNTY ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) G. T. Goodwill, Bloomington. (2) Mrs. Mabel H. Brush, Route 1, Box 315, San Bernardino.

SAN MATEO COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) George V. White, McKinley School, Burlingame. (2) Clara Bolei, Fremont School, Menlo Park.

SANTA CLARA COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Roy E. Simpson, Gilroy. (2) James Moon, Sunnyvale.

SANTA CLARA COUNTY SCHOOLMASTERS' CLUB. (1) Roy E. Simpson, Gilroy. (2) Lewis H. Britton, San Jose.

SONOMA COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) E. V. O'Rourke, Cotati. (2) Edith Peterson, County Superintendent's Office, Santa Rosa.

STANISLAUS COUNTY ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) Reese E. Bert, Roosevelt School, Modesto. (2) Lawrence Miller, Lowell School, Turlock.

TULARE COUNTY ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) Theodore R. Nickel, Earlimart. (2) Thelma E. Dawes, Visalia.

FLORIDA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

DADE COUNTY PRINCIPALS' CLUB. (1) Mrs. Elsie Delaney, 1224 S. W. 20th St. Miami. (2) Claribel Cason, 265 N. E. 26th Ter., Miami.

DUVAL COUNTY ELEMENTARY SCHOOL PRINCIPALS. (1) Mrs. Edith B. Norris, 414 E. Sixth St., Jacksonville. (2) Mrs. Lola M. Culver, Panama Park School, Jacksonville.

JACKSONVILLE BRANCH, DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. (1) Margaret C. Fairlie, 1035 E. Bay St., Jacksonville. (2) Mrs. Lola M. Culver, 2035 Silver St., Jacksonville.

ORLANDO-WINTER PARK ELEMENTARY PRINCIPALS' CLUB. (1) Mrs. Melissa Stafford, Concord Park School, Orlando.

PINELLAS COUNTY PRINCIPALS' ASSOCIATION. (1) G. V. Fuguitt, 906 Pine St., Clearwater. (2) Natalie Sterling, 555 17th Ave., S. E., St. Petersburg.

GEORGIA—SECOND DISTRICT ELEMENTARY PRINCIPALS' ASSOCIATION. (1) R. S. McChesney, East Side School, Thomasville. (2) Mrs. Eva H. Johnson, 1022 First Ave., S. W., Moultrie.

LOUISIANA—COUNTY PRINCIPALS' CLUB. (1) Mary Dingle, Alexander School, Shreveport. (2) Mae Newton, Creswell School, Shreveport.

MAINE—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

HANCOCK COUNTY SCHOOLMASTERS' CLUB. (1) Theodore Emery, Bar Harbor. (2) Chandler S. W. Richmond, Ellsworth.

KENNEBEC VALLEY SCHOOLMASTERS' CLUB. (1) George Bucknam, Waterville. (2) Herbert S. Ingraham, Skowhegan.

PENOBSCOT VALLEY SCHOOLMASTERS' CLUB. (1) Charles E. Taylor, Bangor. (2) C. E. Page, Jr., Bangor.

WASHINGTON COUNTY SCHOOLMEN'S CLUB. (1) Raymond Steward, Eastport. (2) Earle D. Merrill, Machias.

MARYLAND—ALLEGANY COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Loretta McGeady, Cumberland. (2) John F. Manley, Frostburg.

MASSACHUSETTS—WORCESTER PRINCIPALS' CLUB. (1) George H. Boyden, Boylston. (2) Ethel M. Rankin, 18 Norton St., Worcester.

MISSOURI—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

CENTRAL MISSOURI ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) Frank H. Gorman, Education Building, University of Missouri, Columbia. (2) Ralph W. House, Central School, Jefferson City.

SAINT LOUIS COUNTY ELEMENTARY PRINCIPALS' CLUB. (1) Ward Barnes, Garfield School, Normandy. (2) V. Carl Ilgen, Pershing School, University City.

NEW JERSEY — ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

BURLINGTON COUNTY PRINCIPALS' CLUB. (1) Ingeborg Horton, 426 Lippincott Ave., Riverton. (2) Ruth Matchett, Jobstown School, Riverton.

NORTH HUDSON SCHOOLMASTERS' CLUB. (1) William G. Fiedler, Washington School, Union City. (2) Nathan Devine, Union City.

NEW MEXICO—CENTRAL NEW MEXICO PRINCIPALS' CLUB. (1) Caroline Schmidt, 610 W. Cool, Albuquerque. (2) Ona Schupp, 223 N. High, Albuquerque.

NEW YORK—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.

DUTCHESS COUNTY SCHOOLMEN'S ASSOCIATION. (1) Herbert Campbell, Highland. (2) Clayton Selber, Arlington.

NASSAU COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) George E. Graff, Junior High School, Hicksville, Long Island. (2) Henry H. Bormann, East Rockaway Schools, East Rockaway.

ROCKLAND COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) A. Carr, Springvalley. (2) R. E. Day, Hillburn.

SOUTH EASTERN ZONE. (1) William Thomas, Lincoln School, New Rochelle. (2) Luke C. Rhodes, Columbus School, Mount Vernon.

NORTH CAROLINA — ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.
NORTH CENTRAL DISTRICT. (1) Mrs. E. L. Shearon, Swift Creek School, R. F. D. 3, Raleigh. (2) Mrs. R. E. Harris, Mount Vernon-Goodwin School, Raleigh.
NORTHEASTERN DISTRICT. (1) J. E. Miller, John Small School, Washington. (2) Mary H. Bridgers, Central School, Tarboro.
NORTHWESTERN DISTRICT. (1) Mrs. Dan R. Schroder, Elm Street School, High Point. (2) Mrs. R. F. J. Johnson, Ray Street School, High Point.
SOUTHEASTERN DISTRICT. (1) I. A. McCary, Jr., Bradley's Creek School, Wilmington. (2) Gladys Currie, Fort Bragg School, Fort Bragg.
SOUTH PIEDMONT DISTRICT. (1) R. Brown McAllister, Coltrane School, Concord. (2) Mrs. E. S. Brown, Plaza Road School, Charlotte.
WESTERN DISTRICT. (1) John E. Rufty, Brevard School, Brevard. (2) Mrs. M. L. Nesbitt, Glady School, Candler.

OKLAHOMA—NORTHEAST DISTRICT ELEMENTARY PRINCIPALS' ASSOCIATION. (1) A. O. H. Setzepfandt, Barnard School, Tulsa. (2) Mary Shirley, Sequoyah School, Muskogee.

OREGON—CLACKAMAS COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Brenton Vedder, Sandy. (2) Ethel Lansdowne, Gresham.

PENNSYLVANIA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.
PRINCIPALS' ROUND TABLE OF ALLEGHENY COUNTY. (1) M. G. Morris, 1221 Freeport Rd., Tarentum. (2) M. A. Steiner, 59 Danvers Ave., Pittsburgh.
TIOGA COUNTY PRINCIPALS' ASSOCIATION. (1) T. A. Williammee, Wellsboro.

TEXAS—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.
HASKEL COUNTY RURAL SCHOOL PRINCIPALS' ASSOCIATION. (1) R. T. Penn. (2) Hope Haynes.
JEFFERSON COUNTY ELEMENTARY PRINCIPALS' AND SUPERVISORS' ASSOCIATION. (1) Effie Piland, Millard School, Beaumont. (2) Susie Dunn, Lamar School, Port Arthur.

VIRGINIA—ELEMENTARY PRINCIPALS OF DISTRICT M EDUCATIONAL ASSOCIATION. (1) Mrs. Irene C. Bunting, 502 Walnut Ave., S. W., Roanoke. (2) Harriett L. Simpson, 715 Maiden Lane, Roanoke.

WASHINGTON—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.
FORTNIGHTLY CLUB. (1) H. A. Mc Kean, 3801 N. 18th St., Tacoma. (2) T. A. Lind, 1116 N. Lawrence St. Tacoma.
PUGET SOUND SCHOOLMASTERS' CLUB, all of Washington, west of Cascade Mountains. (1) George R. Curtis, 3102 N. Proctor, Tacoma. (2) Frank Farrar, 4703 11th Ave., N. E., Seattle.
WHATCOM COUNTY PRINCIPALS' LEAGUE. (1) Oscar Nelson, Rt. 2, Bellingham. (2) Irene Marz, 1313 High St., Bellingham.

WEST VIRGINIA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION.
CABELL COUNTY ELEMENTARY PRINCIPALS' ASSOCIATION. (1) J. Leo Wright, 1814 Sixth Ave., Huntington. (2) Dora Scarff, Oley School, Huntington.
DODDRIDGE COUNTY TEACHERS' ASSOCIATION. (1) W. B. Van Scoy, West Union. (2) Arel E. Powell, Morgansville.
MARSHALL COUNTY ELEMENTARY PRINCIPALS' CLUB. (1) H. E. Carmichael, Moundsville. (2) Retta Founds, Moundsville.
NICHOLAS COUNTY PRINCIPALS' ASSOCIATION. (1) Earnest Mearns, Summersville. Ocelus Fitzwater, Richwood.
RANDOLPH COUNTY PRINCIPALS' AND TEACHERS' ASSOCIATION. (1) Henry Hamilton, Elkins. (2) Charles Godwin, Montrose.

HAWAII—PRINCIPAL'S CLUB. (1) Charles N. P. Henry, Pepeekeo. (2) Mrs. Hazel P. Spalding, Hawaii National Park.

STATE ELEMENTARY SCHOOL PRINCIPALS ASSOCIATIONS

In the following roster the symbol (1) is used to indicate the person reported as president and (2) is used to indicate the secretary.

ARKANSAS — ELEMENTARY PRINCAPALS' SECTION. (1) H. W. Means, Little Rock. (2) Lula Davis, Pine Bluff.

CALIFORNIA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) William J. Burkhard, Coloma School, Sacramento. (2) Mrs. Blanche Lucas, Dos Palos.

CONNECTICUT — ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) O. Ward Satterlee, Greenwich. (2) Emma Mink, Stratford.

FLORIDA—DEPARTMENT OF ELEMENTARY PRINCIPALS. (1) Ernest W. Cason, Winter Park. (2) Ethel Cornwright, Marks Street School, Orlando.

GEORGIA—ELEMENTARY SCHOOL PRINCIPALS' DIVISION. (1) Robert Dewar, Valdosta. (2) Maude A. Rhodes, 185 Westminster Dr., N. E., Atlanta.

INDIANA—ELEMENTARY PRINCIPALS' CLUB. (1) Ernest Lefforge, Lawrence. (2) W. Harold Gossett, 630 E. 51st St., Indianapolis.

IOWA—ELEMENTARY PRINCIPALS' SECTION. (1) Hale C. Reid, 3616 University Ave., Des Moines. (2) Elizabeth Keerigan, 1216 Scott St., Davenport.

KANSAS—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Howard E. Mock, Hutchinson. (2) Ferne Reynolds, Arkansas City.

KENTUCKY—DEPARTMENT OF ELEMENTARY SUPERVISORS AND PRINCIPALS. (1) Bianca Esch, 1857 Princeton Dr., Louisville. (2) Bonnie Howard, 1311 Cherokee Rd., Louisville.

MASSACHUSETTS—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Sara E. Chase, Washington School, Springfield. (2) Mary C. Carney, Eastern Avenue School, Springfield.

MICHIGAN—DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. (1) Elizabeth Welch, Fairview School, Flint. (2) Glenn Lockwood, Ann Visger School, River Rouge.

MISSISSIPPI—ELEMENTARY PRINCIPALS' AND SUPERVISORS' DIVISION. (1) Laura Lester, Jackson. (2) Mrs. Minnie B. Ford, Louisville.

NEBRASKA—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) Mary Austin, Miller Park School. Omaha. (2) Maude Compton, Highland School, Omaha.

NEW JERSEY—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Mrs. Helen C. Brearley, 57 Princeton Ave., Princeton. (2) Albert L. Hartman, 104 Haddon Pl., Upper Montclair.

NEW MEXICO—ELEMENTARY SCHOOL PRINCIPALS' SECTION. (1) William T. Scoggin, Jr., Las Cruces. (2) Mrs. Maynor D. McGee, Las Cruces.

NEW YORK—STATE ASSOCIATION OF ELEMENTARY PRINCIPALS. (1) Fred H. Duffy, George Washington School, Kenmore. (2) Charlotte West, Elementary School, Mt. Kisco.

NORTH CAROLINA—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Mrs. A. R. Wilson, Lakewood School, Durham. (2) Mrs. Dan R. Schroder, Elm Street School, High Point.

NORTH DAKOTA—SUPERINTENDENTS' AND PRINCIPALS' SECTION. (1) J. Lloyd Stone, Drayton. (2) Lloyd Elias, Harvey.

OKLAHOMA—DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. (1) R. V. Jennings, Oklahoma City. (2) Mrs. Jessie Bagley, Ada.

OREGON—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) K. A. Westenhouse, Junction City. (2) C. E. Ferguson, 3833 N. E. 77th Ave., Portland.

PENNSYLVANIA—ELEMENTARY SCHOOL PRINCIPALS' CLUB. (1) William J. Laramy, Haverford Township, Upper Darby. (2) Reinhold W. Goll, 1830 W. Lindley Ave., Philadelphia.

RHODE ISLAND—ELEMENTARY SCHOOL PRINCIPALS' ASSOCIATION. (1) John F. Brown, Providence. (2) Elizabeth Baldwin, Pawtucket.

SOUTH CAROLINA—DEPARTMENT OF PRINCIPALS. (1) W. H. Grayson, Jr., Simonton Public School, Charleston. (2) J. Andrew Simmons, Booker Washington High School, Columbia.

SOUTH DAKOTA—ELEMENTARY SCHOOL PRINCIPALS' AND SUPERVISORS' ASSOCIATION. (1) Mabel E. Cummings, Rapid City. (2) Maude Rasmussen, Aberdeen.

TEXAS—ELEMENTARY PRINCIPALS' AND SUPERVISORS' ASSOCIATION. (1) L. M. Fertsch, 606 Highland Ave., Austin. (2) Corinne Nash, 1912 Washington Ave., Waco.

VIRGINIA—ELEMENTARY PRINCIPALS' DEPARTMENT. (1) F. L. Fentress, Princess Anne. (2) C. B. Givens, Helen Dickenson School, Richmond.

WEST VIRGINIA—ELEMENTARY PRINCIPALS' ASSOCIATION. (1) Byron Miller, Fairmont. (2) W. E. Lawson, Parkersburg.

LIST OF MEMBERS

THE DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS

FOR THE YEAR 1936–37, CORRECTED TO JUNE 1, 1937

† Indicates the Life Members of the Department

One asterisk (*) indicates the City, County and District Enrolment Chairmen of the Department

Two asterisks (**) indicates the State Enrolment Chairmen of the Department

ALABAMA

Alvarez, Mabel L., 15 N. Reed Ave., Mobile
Alverson, Evelyn, 309 S. 19th St., Bessemer
Ansley, Foster, 7620 Division Ave., Birminhgam
Brown, Eura, 912 Walnut St., Gadsden
Brown, Gregory B., Jr., 5117 S. Seventh Court, Birmingham
Bryant, Mrs. Fred B., 2025 Leighton Ave., Anniston
Calhoun, E. B., Norwood School, Birmingham
Couch, Malcolm G., Parrish
Cox, George D., 1408 N. 20th St., Birmingham
Creel, John Jaul, Box 300, Sylacauga
Flock, Mrs. Elizabeth C., 7 N. Bayou St., Mobile
Flurry, Bruce, Box 137, Dothan
Follis, Hattie, 3013 Ave. F, Ensley, Birmingham
Gardner, J. R., Jr., The Lakeview School, 28th St. at Ninth Ave., S., Birmingham
Hall, William R., R. F. D. 5, Box 63-B, Birmingham
Hamil, E. Cranston, 1814 Hunter Ave., Mobile
Hanlin, J. Paul, Inglenook School, 4120 Inglenook St., Birmingham
Hill, R. Voyt, Martin School, 1201 14th Ave., N., Birmingham
Hopper, Jessie, Madison St., Huntsville
Hurlbert, R. D., 879 Sixth St., W., Birmingham
Hutchens, Mrs. N. B., 167 Williams St., Mobile
Johnson, Harold B., Fairview School, Birmingham
**Johnston, Robert C., 2030 Magnolia Ave., S, Birmingham
Jones, Lenore, 1606 Monterey Pl., Mobile
Keenon, Edgar, Jr., Central Park School, Birmingham
Kegley, T. M., Minor School, 2425 Ave., S., Ensley, Birmingham
Kelly, F. L., The Graymont School, 300 Eighth Ave., W., Birmingham
Knight, Myrtle W., Cotton Valley School, Ft. Davis
Landers, E. J., Jacksonville
Lee, Farley, Teachers Training Library, Alabama Polytechnic Institute, Auburn
McDonald, Wilbur M., Dadeville
McLatchy, Gertrude E., Elyton School, 100 Tuscaloosa Ave., Birmingham
MacMillan, Emma, 120 Cramer Ave., Montgomery
Martin, Ralph, Kennedy School, 120 63rd St., Birmingham
Matzenger, Lena, 1058 Selma St., Mobile
Meigs, Mrs. Mary S., 1209 Glenwood Ter., Anniston
Mellette, W. E., Route 1, Gurley
Mills, H. T., Route 1, Enterprise
Murphree, Mrs. Myra B., Prattville
Norton, H. B., Robinson School, 8400 First Ave., S., Birmingham
Ozzier, W. C., Moore School, 1401 Ave. G, Ensley
Parris, H. E., East Tallassee
Patrick, Charles A., 2227 22nd St., Ensley, Birmingham
Pogue, James J., Gibson School, 956 50th St., N., Birmingham
Price, N. H., 300 N. Sixth St., S. W., Birmingham
Reagan, W. A., Wylam School, Birmingham
Reynolds, Mrs. Nellie D., Box 74, Northport
Richards, Henry G., 506 N. Walnut St., Florence
Rives, Janie L., 5 High St., Montgomery
Rollings, Alexine, Box 692, Andalusia
Sanders, E. O. 2745 Pike Ave., Birmingham
Sapp, Ella F., 1511 Fourth Ave., Bessemer
†Sheffield, Mrs. Frances L., 10 N. Ann St., Mobile
Snoddy, W. T., North Birmingham School, Birmingham
Underwood, C. Price, 7830 Third Ave., S., Birmingham
Vaughan, Joseph T., 5521 First Ave., S., Birmingham
Verner, Mary B., 1521 Tenth St., Tuscaloosa
Wiener, Florence E., 252 S. Ann St., Mobile
Wilder, L. Virgil, 720 McMillan Ave., Birmingham
†Williams, J. D., 5708 Sixth Ave., S., Birmingham
Woodall, Mrs. J. B., 308 S. Greene St., Huntsville
Wright, Theodore R., Barker School, 1230 23rd St., N. Birmingham

ARIZONA

Aldridge, A. C., Dunbar School, Phoenix
Ballfinch, Loy, 439 E. First St., Tucson
Benedict, F. J., Benson Grammar School, Benson
Brown, Clarence S., Box 137, Ajo
*Carlisle, O. L., Grammar School, Somerton
Court, Grace, 2005 W. Washington, Phoenix
*Dexter, Mata E., 113 N. Pleasant St., Prescott
Doepke, Lydia M., Box 127, Clarkdale
Dyer, Mrs. Gussie, Primary School, Hayden
Eide, Edna E., 203 Union St., Prescott
Fisher, Marjorie E., 203 Union St., Prescott
*Keen, Julia C., 1905 E. Fourth St., Tucson
King, J. W., 358 N. 15th St., Phoenix
*Kinsey, Lura, Box 54, Flagstaff
*Kirby, Wesley D., Coolidge
Landry, P., Box 3613, Phoenix
*Martin, Aileen, 325 S. First St., Globe
Meyers, George L., Klagetoh Area Schools, Klagetoh
Mitchell, A. J., Box 1751, Nogales
Ott, Ann, Stevenson School, Phoenix

Porter, M. D., Holbrook Public Schools, Holbrook
Riggs, Edward L., Dysart School No. 89, Peoria
Robertson, Ellen M., 828 E. Fifth St., Tucson
Schmitt, P. N., Keams Canyon
Sheldon, Mrs. Lina K., McKinley School, Phoenix
*Soule, H. M., 3999 Cleveland Rd., Phoenix
Stinchfield, Bess, Kenilworth School, Phoenix
*Sullivan, W. R., Public Schools, Palo Verde
Taylor, Ebbie Lee, 233 N. Alarcon St., Prescott
Thomas, John Q., Supt. of Schools, Flagstaff
Townsend, Salome, Roskruge Elementary and Junior High Schools, Tucson
**Wickliffe, Chester, Balsz School, Route 10, Phoenix

ARKANSAS

Abbott, T. C., 2014 Schiller, Little Rock
Arnold, F. B., Box 144, Midland
Conte, Mrs. Lelia M., 290 Woodlawn, Hot Springs
Cordell, Thyra, Rogers School, Ft. Smith
Evans, Bessie, 1005 McGowan St., Little Rock
Futrall, Alma, Dept. of Education, Marianna
Jinske, Henry W., 124 Fox St., Hot Springs National Park
**Jones, Ralph B., Peabody School, Ft. Smith
Ledwidge, Annie, 714 N. Walnut St., Little Rock
Maddux, Alfred, Box 56, Crawfordsville
Means, Hendree Winston, Peabody School, Little Rock
Moore, Rosa E., Box 114, Morrilton
Smith, R. L., Box 427, Eureka Springs
Washington, Ruby, Duval School, N. 14th St., Ft. Smith
Webb, Victor L., 1514 W. 20th, Little Rock
Williams, Mollie, Belle Point School, Ft. Smith
Woods, Ethel, 1205 Madison St., Jonesboro

CALIFORNIA

Aarup, Mrs. Margaret B., 949 Sycamore Ave., Tulare
Abbott, Robert B., 1043 Glendora Ave., Oakland
Adams, Mrs. Ida James, 3516 Buena Vista Ave., Glendale
Addicott, Irwin Oliver, 3408 Balch Ave., Fresno
Alexander, Mertie, 4227 S. Hoover St., Los Angeles
*Alexander, Roxie E., 920 Virginia St., Vallejo
Allen, Robert H., Jefferson School, 1400 E. Lindsay St., Stockton
Anderson, Adda, 2511 E. First St., Long Beach
Anderson, Emma C., 7830 S. Harvard Blvd., Los Angeles
Andreen, Earl P., Brooklyn School, San Diego
Andrews, Mary A., 810 S. Ross St., Santa Ana
Andrews, William C., San Jacinto Elementary School, San Jacinto
Ashley, Margaret, Route 1, Box 340, Lodi
Aultman, Mrs. Lela W., 6161 Barrows Dr., Los Angeles
Bailie, Mrs. Lorraine, 2624 N. Commonwealth Ave., Los Angeles
Baker, Ethel I., 1517 40th St., Sacramento
Bancroft, Roscoe, Ripley
*Barber, Mrs. M. Ellen C., 1156 22nd St., San Diego
Barclay, Berthile, Wilson School, 2038 Bush, Santa Ana
*Bardarson, Otto W., Box 600, Carmel
Barnard, Nora Margaret, Malabar School, 3200 Malabar St., Los Angeles
Barnes, Mrs. Agnes Caldwell, 2415 Hollister Ter., Glendale
Barnes, George P., 1120 Oak St., Colusa
Barnes, Mrs. Jessie Baldwin, 407 E. State St., Long Beach
Barrows, Jeannette, Hillside School, Buena Vista and LeRoy, Berkeley
Bartlett, Beulah D, 3345 S. San Gabriel Blvd., San Gabriel
Bartlett, Mrs. Louise, 1414 Eighth St., Sacramento
Bateman, L. W., 1615 Linwood St., San Diego
Bates, Elizabeth, 365 S. Highland Ave., Los Angeles
Beach, Rachel Ann, 452 Holland St., Los Angeles
Beaty, Jesse J., 826 Cleveland Ave., Oakland
Bedford, Rowena, San Timoteo Rd., Box 61, Redlands
Benner, W. A., 1670 Grand Ave., Piedmont
Benning, A. Irene, 141 Nieto Ave., Long Beach
Benson, Albert N., Hawthorne School, 1700 28th Ave., Oakland
Berard, Elvina L., Commodore Sloat School, Ocean Ave. and Sloat Blvd., San Francisco
Bernard, Lloyd D., Chico State College, Chico
Berry, Bertha Irene, 1261 Maripsoa Ave., Glendale
*Bert, Reese E., 135 Hackberry Ave., Modesto
Biffer, Mary C., 1253 W. Fifth St., Los Angeles
Billups, Lillian H. B., 847 Levering Ave., West Los Angeles
*Birch, J. E., Elementary School, Willows
Blakemore, Edith E., 1030 W. Second St., Pomona
Blanchard, Alice, 235 E. Alvarado, Pomona
Bliss, George C., 3432 Guido St., Oakland
Boettcher, Nita Toney, 8955 San Juan St., South Gate
Boone, G. N., 1654 Francisca St., Pasadena
Borden, Mary Gray, 1219 Eye St., Modesto
Borden, Nellie G., 2219 San Joaquin St., Fresno
Borneman, Katharine H., 8069 Castro Valley Blvd., Hayward
*†Bowen, Wayne F., Box 455, Compton
Bowman, Robert C., 1657 Beulah Pl., Oakland
Bowman, Samuel H., 6917 Converse Ave., Los Angeles
*Bowring, H. F., 133 High St., Modesto
Boyer, Mrs. Edith, 2438 Altura St., Montrose
Bradley, Anne M., 412 63rd St., Oakland
Bragg, Mrs. M. Fanny, Delhi School, 1143 S. Parton, Santa Ana
Breen, Ellen R., 1067 Lincoln Ave., San Diego
Brems, Edna M., 312 W. Laurel St., San Diego
Brimmer, Naida, 300 N. San Marino Ave., San Gabriel
Britto, Ethel A., 425 Eastern Ave., Taft
Brown, Bessie Olive, 4053 Irving Pl., Culver City
Brown, Evelyn K., 615 Solano Ave., Los Angeles
Brown, William Earl, 15246 Budlong St., Gardena
Brubaker, David E., 2320 Greenfield Ave., West Los Angeles
*Buckalew, Harry L., 408 N. Fulton St., Fresno

*Bullard, Lyrel D., Maxwell Union Grammar School Dist., Maxwell
Burkhard, William J., Coloma School, Sacramento
*Burns, Jane B., Route 2, Box 317, Petaluma
Burr, Marjorie F., 308 Myrtle St., Redlands
Burton, Katharine, 10545 Helendale Ave., Tujunga
Bushnell, Rose J., 545 Wheeling Way, Los Angeles
*Buttner, Mrs. Ella, Homestead School, Mill Valley
Butzine, Fred C., 1795-B Titus St., San Diego
Calder, Jessie, Burckhalter School, 3956 Burckhalter Ave., Oakland
*Callahan, Mrs. Stella M., 212 N. Alta Vista, Monrovia
Campbell, Florilla, 825 N. Baker St., Stockton
Carmichael, Bessie M., 348 Louisburg St., San Francisco
Carver, Mary H., 3825 Sixth Ave., San Diego
Catlin, Ruby, 816 Kern St., Kingsburg
*Chamberlain, Clarence W., 953 N. First St., Banning
Chamberlain, Mary B., 1039 Atlantic Ave., Long Beach
Chandler, Mrs. Myrtle B., 1234¾ W. Fifth St., Los Angeles
Chapin, Alice C., 610 N. Kenmore Ave., Los Angeles
Chase, Ethel E., 912 S. Chevy Chase Dr., Glendale
Christensen, Serena P., 661½ N. Berendo St., Los Angeles
Clayton, Mrs. Rose C., 1821 Pepper St., Alhambra
Clemens, K. F., Box 25, Wasco
Clifford, Charles A., 2143 W. 74th St., Los Angeles
†Cobb, De Roy F., 1218 N. Chester Ave., Pasadena
Coffey, Julia C., 240 Montalvo Ave., San Francisco
*†Cokeley, John Wesley, Jr., 505 E. Live Oak St., San Gabriel
†Coleman, Mrs. Ida Fulton, 10334 Tennessee Ave., Los Angeles
Colerick, Mrs. Mabel S., 296 Foothill Blvd., Altadena
Colestock, Grace B., Sixty-sixth Street School, 309 E. 67th St., Los Angeles
Collis, Alma A., 2110 Santa Clara Ave., Oakland
*Compton, John L., Washington School, Bakersfield
Connor, Edith A., 5121 Brynhurst Ave., Los Angeles
Connors, Anne B., Burnside Avenue School, 1515 Burnside Ave., Los Angeles
Conwell, Delsy Dyche, 847 S. Genesee St., Los Angeles
Cook, Isabel M., Box 215, San Anselmo
Cookman, Mrs. Grace Olive, 618 W. 49th St., Los Angeles
Cornwell, L. May, 135 N. Kenwood St., Glendale
*†Correll, Vincent I., 1838 McKenzie St., Long Beach
Cotter, M. Elsie, Lazear School, 29th and Elmore Sts., Oakland
Couchman, H. H., 717 W. 80th St., Los Angeles
Cowan, Rose E., 200 N. Rampart Blvd., Los Angeles
Cox, Arthur W., 775 Molino Ave., Long Beach
Cox, Vivian Kathleen, 112 W. Newmark Ave., Wilmar
Craig, Mary D. S., 3680 Colonial Ave., Venice
Crane, Clarence B., Webster School, Oakland
Crane, R. L., Jr., Dist. Supt. of Schools, 344 Santa Barbara Ave., Daly City
Crapser, Jessamine, 1826 S. Mansfield Ave., Los Angeles
Crawford, Bertha T., 3027½ S. Hoover St., Los Angeles
†Crawford, Lawrence T., College Elementary School, State College, Chico
Creedon, Mrs. Elma M., 732 York St., Vallejo
Crookshank, Sara A., 1027 W. 46th St., Los Angeles
Crose, Leah, Webster School, 320 E. Walnut St., Pasadena
Cross, Flora, 248 N. Towne Ave., Pomona
Cross, Irvin N., 1520 Van Buren Ave., San Diego
Crowley, Mrs. Viola W., Box 222, Canoga Park
Culver, Harriet E., 402 W. 51st St., Los Angeles
Curley, Laura, 1121 Trestle Glen, Oakland
Curran, Eleanore, Box 397, Willowbrook
*Curtis, Lawrence C., 565 Chapman Court, Santa Clara
Cuthbertson, Ernest J., 219 Mt. View, Taft
Danielson, Eva, 2306 Edgewater Ter., Los Angeles
*D'Anna, Joseph A., 7 Jefferson St., Watsonville
Dannemann, Matie, 437 E. Maple Ave., Orange
Dastarac, Frances, 659 W. 18th St., San Pedro
Davin, Mrs. Bernice, 3237 Goldsmith St., San Diego
*Davis, Barney J., Union School, Lakeport
Davis, Burton Elsworth, 1848 Veteran Ave., Terminal Island
Davis, Mrs. M. E., Box 595, Exeter
Davis, Mrs. Vivian Klene, 233 Roswell Ave., Long Beach
Day, Mrs. Mylitta Morris, 608 De La Vista Ave., Santa Barbara
Dean, Anastasia E., Pinole
Dean, Ray B., David Lubin School, 36th and K Sts., Sacramento
Delmet, Don Thomas, 854 G St., Norwalk
Desmond, Lucile H., Pershing School, Madera
Des Roches, Pauline, 1323 Woolsey St., San Francisco
Doak, Helen Perry, 119 N. Rosemont Blvd., San Gabriel
Dodson, Mrs. Helen F. Clarke, 1320 S. Cochran, Los Angeles
Dormeyer, Therese C., 512 W. Cressey St., Compton
Dreier, Mrs. Grace M. Mogle, 1622 S. Canfield, Los Angeles
Dust, Gertrude, 5322 Lockhaven Ave., Los Angeles
Eads, Evelyn, 11659 Foothill Blvd., San Fernando
Earl, Claude E., 966 Elizabeth St., Pasadena
Edgecomb, George, 1645 S. Date Ave., Alhambra
Edmands, Mrs. Ruth, Colusa
Edwards, Ernest F., 631 E. Mill, Santa Maria
Edwards, Eva D., Elementary School, Claremont
Egger, Walter A., 846 N. Van Ness St., Santa Ana
Eilers, Johanne, Lincoln School, 415 Harwood Pl., Santa Ana
*Elwood, Roby T., 201 S. Chapel St., Alhambra
*Emley, H. W., Box 391, Garden Grove

Enfield, Mrs. Celesta Gertrude, Fairburn Avenue School, 1403 Fairburn Ave., West Los Angeles
Enfield, O. D., 426 S. Union Dr., Los Angeles
*Engvall, Willard R., Box 998, Corcoran
Ensign, Olive Leona, 3736 Arlington Ave., Los Angeles
Eskey, Nettie Dagley, 11532 Hartsook Ave., N., North Hollywood
*Estes, Charlotte, 2420 Gough St., San Francisco
Farnum, Martha F., 1520 Glorietta Blvd., Coronado
Farrington, Mrs. Rae Lee, 1708 Beverly Dr., Pasadena
Feazell, Ruby Caroline, 1633 N. Formosa Ave., Hollywood
†Field, Mrs. M. Elizabeth, 6017 Franklin Ave., Hollywood
Fikes, Edith E., 472 Ocean St., Santa Cruz
*Finchy, Katherine, Frances H. Stevens School, Palm Springs
Finney, Grace E., 1919 W. 21st St., Los Angeles
*Finney, J. J., Crystal School, Suisun
Finney, Mrs. Myrtle S., Route 1, Box 504, Chula Vista
†Floyd, Mrs. Mary L., 1018 Seward St., Los Angeles
†Flynn, Mary C., Route 2, Box 679, El Monte
Foley, Ellen J., Box 157, Benicia
Fraser, Jessie M., 716 Columbia Ave., Los Angeles
Fratis, Mrs. Sue L., Fruitvale School, 3200 Boston Ave., Oakland
Fuller, Grace M., 581 Yosemite Ave., Fresno
*Fulmore, Elizabeth, Ferndale
Fulwider, Alice Ethel, 400 N. Gardner St., Los Angeles
†Gamble, Mrs. Leo May, 3838 S. Hobart Blvd., Los Angeles
Gant, Minnie, 416 Orange Ave., Long Beach
Gardner, Elizabeth M., 618 Paseo Del Mar, San Pedro
Gardner, Mary Ellen, South School, Lawndale
Garrison, Dora L., 1641 S. Orange Dr., Los Angeles
Gearhardt, Jessie M., 230 N. Breed St., Los Angeles
Geddis, Terence B., 2536 K St., San Diego
George, Edna, 1409 W. 37th St., Los Angeles
Gibson, Charles D., Supt. of Schools, 222 Mountain View Rd., El Monte
Gibson, Robert E., Box 476, Walnut Creek
Gilbert, Carl E., 114 S. Santa Anita Ave., San Gabriel
Gilson, Mrs. Blanche, South Dos Palos
Gist, Arthur S., Pres., Humboldt State College, Arcata
Glenn, I. Maude, 55 N. Meredith Ave., Pasadena
*Glenn, Ray F., 980 Arrowhead Ave., San Bernardino
Glissman, Henrietta M., 136 S. Commonwealth, Los Angeles
Glover, Mrs. Percy F., Fremont School, Fourth and Termino Ave., Long Beach
*Goodwill, Glen, Bloomington
Graf, Louise, 1250 S. Carmona Ave., Los Angeles
Granger, Roy T., 302 Magnolia Ave., Piedmont
Gray, Avery J., Div., School Savings Section, 1205 W. Pico St., Los Angeles
Gray, Robert, Route 1, Box 34-C, Colton
*Greene, Lucy B., 418 Jefferson Ave., Pomona
Grimsley, V. H., 2150 47th Ave., Oakland
Grinnell, Frances G., 4755 Keniston, Los Angeles
Grover, Charles C., 610 E. 19th St., Oakland
Groves, Mary O., Cabrillo Avenue School, San Pedro
Haas, Nelle M., Box 894, Lomita
Hagenburger, Marion A., Box 14, Chatsworth
Haigh, Anne B., Cabrillo School, 25th Ave., San Francisco
Hale, Ralph I., Dist. Supt. of Schools, Atascadero Elementary School, Atascadero
Hale, Mrs. Verne L., Gravois Avenue School, 5400 Gravois Ave., Los Angeles
Hall, LeRoy, 569 Michigan Blvd., Pasadena
Hamm, Max, 5961 Buena Vista Ave., Oakland
Hammel, Julius C., 842 E. 19th St., Oakland
†Hammond, Mrs. Gertrude Best, 7316 Crenshaw Blvd., Los Angeles
Hammond, Ida M., 3004 Champion St., Oakland
†Hanna, Paul R., Assoc. Prof. of Educ., Stanford University, Stanford University
Hanson, Edith J., 1443 Martel Ave., Los Angeles
Harris, Mrs. Alta., 5445 Anza St., San Francisco
Harris, Beecher H., Whittier School, Berkeley
Harris, Ella M., 242 F St., San Bernardino
Hartman, Zafon A., Route 2, Box 196, Ventura
Hartshorn, Edna, 1011 W. 70th St., Los Angeles
Hauselt, Elisabeth E., 2199 California St., San Francisco
**†Haw, Harry Huber, 1413 Golden Gate Dr., San Diego
Hawks, William J., 4646 Winona Ave., San Diego
Hayes, Mildred L., 716 Avila St., Los Angeles
Hayward, Mrs. Lucy M., 3521 E. First St., Long Beach
†Heacock, A. B., 709 E. Windsor Rd., Glendale
*Heche, Arthur, 1521 Union St., Alameda
Heffernan, Helen, State Dept. of Education, Sacramento
*Heisner, H. Fred, 128 East F St., Colton
Helbach, Merle, 1543 W. 83rd St., Los Angeles
Helm, Mrs. Florence G., 4314 Seventh Ave., Los Angeles
Helms, W. T., 1109 Roosevelt Ave., Richmond
Henderson, Adin D., 2533 39th St., Sacramento
Hendrick, Orra Leta, 2129 S. Alsace Ave., Los Angeles
Henley, Grace, Polytechnic Elementary School, Pasadena
*†Herrington, Katie A., 962 Lincoln Way, Auburn
Hewitt, Mrs. Ida F., 2690 Ellendale Pl., Los Angeles
Hill, Beulah P., 152 S. Berendo St., Los Angeles
Hilton, Eugene, 3918 Everett Ave., Oakland
*†Hoffman, Mrs. Howardine G., 392 Riverside Dr., Chino
Holland, Minnie L., 20 E. Los Olivos St., Santa Barbara
Holleran, Nora, 1846 Crenshaw Blvd., Los Angeles
Hollowell, Hazel, 5216 Longfellow St., Los Angeles

†Holmes, Edith M., 1811 W. 41st Pl., Los Angeles
Homan, Rose, 1633 College Ave., Fresno
Hoogner, Edna Viola, Brockton Avenue School, West Los Angeles
Hooker, Ora Whitley, 947 W. 30th Pl., Los Angeles
Hopkins, Clarence G., 5139 Argus Dr., Los Angeles
Hopley, Nettie M., Lincoln School, Fourth and Q Sts., Sacramento
Horne, Henrietta, Logan School, 1330 N. Garnsey, Santa Ana
Houston, Edith L., 790 Calmar Ave., Oakland
*Howard, Mrs. George G., 615 Manchester Ter., Inglewood
Howell, Etta H., Roosevelt School, 15th and Linden, Long Beach
†Howk, Charles D., 344 Flower St., Pasadena
Hudspeth, Charles E., 759 59th St., Oakland
Hughes, Mrs. Mary E., 847 Campus Way, San Bernardino
*†Hummel, Leonard G., Dist. Supt. of Schools, Box 184, Palos Verdes Estates
Huntington, Henriette L., 1206 O St., Sacramento
Huntoon, Mrs. Georgie K. Miller, 1017 Browning Blvd., Los Angeles
Hurley, Mrs. Josephine E., Los Cerritos School, Clearwater
Hurley, Morris E., 3144 Claremont Ave., Berkeley
Hymer, Evangeline, Menlo Avenue School, 4170 S. Menlo Ave., Los Angeles
Ireland, Frances, 1043 E. Broadway, Long Beach
Irwin, Kathryn, 322 Seventh St., Antioch
Irwin, Sue J., 1010 Delaware St., Berkeley
†Iversen, Ida Christine, 349 N. Wilton Pl., Los Angeles
Janes, Hattie E., 2439 Mariposa St., Fresno
*Jenkins, Letha F., Ross Grammar School, Ross
Jensen, Elsie M., 2609 E. Glenoaks Blvd., Glendale
Johns, Charles L., 11215 La Maida St., North Hollywood
Johnson, Mrs. Ethel S., 600 37th St., Sacramento
*Johnson, Frank R., Dist. Supt. of Schools, Guadalupe
Johnson, Henrietta, 285 Van Buren Ave., Oakland
Johnson, Kenneth Harra, 1447 Idlewood Rd., Glendale
Johnson, Ruth P., 4690 Victoria Ave., Riverside
*Johnson, V. Bernard, Box 338, Pleasanton
Jones, Mrs. Anna B., 741 El Morada Court, Ontario
Jones, Clara E., 5917 Lillian St., Los Angeles
Jones, Elizabeth A., 2818 Flower, Huntington Park
†Jones, Mrs. Onorinda, Pleasant Valley, Camarillo
Joseph, Manuel T., 1201 Ninth St., Monterey
Judkins, Mrs. Frances, Pismo Grammar School, Pismo Beach
Kaems, Lester, 841 W. 21st, Los Angeles
Kahl, Minnie, 608 Excelsior Ave., Oakland
Kaler, J. E., Sierra School, Sacramento
Kelly, Florence M., 1801 New Jersey St., Los Angeles
Kelly, Mrs. Irene E., 1500 Sutter St., San Francisco
Kelly, Julia M., 1801 New Jersey St., Los Angeles
Kilton, Inez G., John G. Whittier School, 17th and Walnut Ave., Long Beach
Kimball, Harold, 920 Rosecrans St., San Diego
†Kimes, William F., Box 176, Avenal
Klaus, Bertha J., 3655 Broderick St., San Francisco
Kottinger, E. W., Durant School, Oakland
Krebs, Grace Edith, 3218 Palmer Dr., Eagle Rock
Kretsinger, R. W., Lincoln School, Tenth and Alice Sts., Oakland
Kyes, Mrs. M. D., 6211 Beard St., Los Angeles
†Kyte, George C., Haviland Hall, University of California, Berkeley
Lacy, Helen J., Melrose School, Oakland
Lages, Dora, Jefferson School, Oakland
Laurendeau, Mrs. Lulu B., 252 Cherry Ave., Long Beach
Lawrence, Mabel M., 221 N. Ave. 52, Los Angeles
*Lawson, Oliver C., Box 803, Pittsburg
*Learned, Roy E., Box 274, Elk Grove
*Le Chien, Elizabeth, 642 N. Newlin Ave., Whittier
*Lee, Mrs. Iva Reeves, 477 N. Shaffer St., Orange
Lefever, Mrs. Ruth B., 2909 Hope St., Huntington Park
Lenvig, Bessie C., 117 N. Ave. 55, Los Angeles
*Liddicoat, Roy L., 530 Laurel Ave., Palo Alto
Lighton, Bertha B., Glen Alta School, 3410 Sierra St., Los Angeles
Lindsay, Isabel F., 722 Halladay St., Santa Ana
Lockhart, Ruth M., 5006 S. Normandie, Los Angeles
Lofstedt, Christine, Garfield School, 1021 Concha St., Altadena
Lothrop, Mary, 667 S. Hoover, Los Angeles
Lounsbery, Sophia M., 2713 McConnell Dr., Los Angeles
Love, M. Lily, 15 Paloma Ave., Ingleside Ter., San Francisco
*Lucas, Mrs. Blanche, Dos Palos
*†Lyon, Harley W., 95 N. Sierra Bonita Ave., Pasadena
McCarthy, Aileen, Fremont School, McAllister near Baker, San Francisco
McChesney, P. C., Newton Booth School, 26th and V Sts., Sacramento
McCleery, Ella G., Crocker School, 17th and Vallejo Way, Sacramento
McCleish, Nellie, 3722 Elmwood Court, Riverside
McClure, Martha, Reseda School, Reseda
McCotting, Mrs. Kathryn, 2308 W. 22nd St., Los Angeles
McDonald, George J., 1802 Wellington Rd., Los Angeles
McEachin, Mary W., Trinity Hotel, 851 S. Grand, Los Angeles
*McGinley, Mrs. Ethel, Box 840, Eureka
McGivney, Genevieve, 1677 Dolores St., San Francisco
McGraw, Mrs. Margaret A. F., 5137 Angeles Vista Blvd., Los Angeles
McIntosh, Margery, Box 702, Victorville
McMahon, Mrs. Minnie M., 928 W. Fifth Ave., Pomona
*McMaster, J. F., 347 W. Garfield Ave., Glendale
McMurray, Vera Elena, 2111 Menlo Ave., Los Angeles
MacMillan, Jean, Ramona School, 1100 N. Normandie Ave., Los Angeles
Magnuson, Henry W., Melrose School, 540 Mandana Blvd., Oakland
Maguire, S. Edna, 165 Elm St., Mill Valley
Maland, Mrs. Emma W., 769 Page St., San Francisco

Manley, Edna T. H., 1049 S. Mansfield Ave., Los Angeles
Mannatt, Earnestyne W., 4721 Ninth Ave., Los Angeles
*Manner, Carl B., Box 1291, Vallejo
*†Marbut, John W., 1140 Mahar St., Wilmington
Marchant, Maud, 400 Montclair, Oakland
Marcotte, Pauline, 3018 Kansas St., Oakland
Martens, A. N., Burrel Union Grammar School, Burrel
Martin, A. H., Burnett School, Atlantic and Hill Sts., Long Beach
Martins, Victor L., 1721 W. 25th St., Los Angeles
Mason, Bessie H., 1005 W. Sixth St., Los Angeles
Mead, Mildred, 601 S. Ross St., Santa Ana
Meeks, Ida V., 1252 14th St., San Diego
Miller, Douglas B., Lafayette School, Oakland
Miller, Mrs., Elsie De K., 2850 Hawthorne, San Diego
Miller, Laurence L., 122 Merrett St., Turlock
Mishler, Grace M., 577 E. Pasadena St., Pomona
Mixsell, Frank H., 1010 E. Wilson Ave., Glendale
Mock, Thomas M., 443 El Camino Rd., Beverly Hills
*Molony, Mrs. Edith H., 232 N. Almont Dr., Beverly Hills
Morris, Perry S., 443 Barbara Ave., Azusa
Morrison, Mrs. Isabelle W. C., 14615 Magnolia Blvd., Van Nuys
Mosher, John A., Magnolia School, Beaumont
*Mount, Mrs. Florence D., 3113 Sparr Blvd., Glendale
Munce, Tillie C., 14 Glenn Ave., Fresno
Murray, Mrs. Katherine K., 206 East G St., Ontario
Nagle, Mary I., Toland Way School, 4545 Toland Way, Los Angeles
Netz, Joseph, 2311 Tenth Ave., Los Angeles
Newman, Mrs. Ethel B., 2214 Ocean View Ave., Los Angeles
Newman, Laura J., 2142 Arrowhead, San Bernardino
Nichols, Roy T., Golden Gate Junior High School, Oakland
Niegosch, Helena G., 656 W. 36th St., Los Angeles
*Nugent, Michael, Jr., Gridley
Nye, Martha E., 3445 28th St., San Diego.
O'Bannon, Mary B., 137 Ardmore Rd., Berkeley
Olinder, Mrs. Selma B., 108 N. Third St., San Jose
*Olson, Oscar H., 1452 Vancouver, Burlingame
O'Reilly, E. P., William Land School, 11th and U Sts., Sacramento
O'Rourke, E. V., Box 201, Cotati
Orr, Jane C., Ninety-Second Street School, 9211 Grape St., Los Angeles
†Orth, Fred W., 2031 Arlington Ave., Los Angeles
Ott, Eva M., 61 Agnes St., Oakland
*Owen, William E., Jefferson School, 1400 E. Lindsay St., Stockton
Paine, Arthur E., 2834 Grand, Huntington Park
Paine, Mae L., 131 W. Ave. 42, Los Angeles
*Palmer, J. H., Box 106, Placerville
Palmer, Mabel, 86 N. Catalina Ave., Pasadena
*Parker, Bertha Mae, 957-B Seventh St., Santa Monica
Patten, Mrs. Nina S., 905 Hickory St., Compton
Peck, Mrs. Kathryn H., 957-B Seventh St., San Monica
Peddle, Mrs. Gertrude W., 4725 Victoria Ave., Los Angeles
Pennycook, Annie, 744 Ohio St., Vallejo
*Peters, W. J., Hester School, San Jose
Phoenix, Hattie B., 329 W. Micheltorena St., Santa Barbara
Pitkin, Mrs. Virginia R., 411 S. Occidental Blvd., Los Angeles
Plagemann, Dora E., 1369 Hyde St., San Francisco
Pogson, Mrs. Viola L., 6974 Hawthorne Ave., Hollywood
Pollich, Raymond Elliott, Dir. of Instruction, Los Angeles Schools, 1055 N. Fairfax Ave., Los Angeles
Poore, Margaret I., 1121 Wellington St., Oakland
Poulsen, Esther R., 1823 Grand Ave., Santa Barbara
Preston, C. W., Melrose Avenue School, 731 N. Detroit St., Los Angeles
*Pullis, Mrs. Jessica K., 1132 Fremont, South Pasadena
*Pursell, Arthur L., 738 E. King St., Tulare
Putman, Mrs. Mabel C., 900 B St., Petaluma
Quick, Cyrus F., 125 Claremont Ave., Long Beach
Racek, Mrs. Josephine Wilkes, 530 California Ave., Venice
Radley, J. E., Route 1, Box 60, Sanger
Ransom, Mae, 1705 S. Sixth St., Alhambra
Rasmussen, Mrs. Eva Hale, Box 714, Auburn
Rector, William G., 5957 Chabolyn Ter., Oakland
Redden, Albert, 8668 Evergreen Ave., South Gate
Reese, Mrs. Erma B., Woods School, Woodbridge
Reinke, Gertrude H., 5063 Floristan Ave., Los Angeles
Reynolds, Mrs. Christine Marsh, 1824½ Manhattan Pl., Los Angeles
Rice, Mrs. Jenne W., Washington School, Santa Monica
Richards, Marcella, 1125 Kipling Ave., Los Angeles
Riddell, A. H., 3720 Pershing Ave., San Diego
Riecks, Eva A., 492 Larkin St., Monterey
Riese, Ella L., 2800 Walnut St., Huntington Park
Riggins, Mrs. Mildred E. M., 1607 S. Fairfax Ave., Los Angeles
Ritchie, Georgina D., Corona Avenue School, 3825 Bell Ave., Bell
Ritchie, Mary Levan, Hoover Street School, 867 S. Hoover St., Los Angeles
Ritter, Mrs. Blanche P., 640 N. Normandie Ave., Los Angeles
Robbins, S. P., 3430 Seventh St., Chico
Roberts, Bertha, 2151 California St., San Francisco
Roberts, Eulia S., 10325 Orton Ave., West Los Angeles
Rose, Jennie, 1427 S. Mansfield Ave., Los Angeles
Ross, Maurice B., 2945 33rd St., San Diego
Ross, Mrs. May S., 3922 Park Blvd., San Diego
Roth, Minnie J., 1625 O St., Sacramento
Rowell, Mary Grace, 271 S. Oak Knoll, Pasadena
†Rusling, Mrs. Cora S., 7830 Victoria Ave., Los Angeles
*Ruth, Clarence, Dist. Supt. of Schools, Lompoc
*†Rutherford, H. C., Dist. Supt. of Schools, Box 55, Orcutt
Ryan, Jane, 575 Pierce St., San Francisco

Sands, Elizabeth, Dir. of Instruction, 115 S. Ave. 24, Los Angeles
Saxton, M. Emma, 1015½ Virginia Pl., Glendale
Scalapino, William, 1315 Alta Vista Rd., Santa Barbara
Scharf, Mrs. Eva Pearl, 834 Nowita Pl., Venice
Schultz, Henriette M., 412 N. Granada, Alhambra
Schweitzer, Charles G., 5933 Miramonte, Los Angeles
Scott, Leta M., 245½ Eureka St., Redlands
Seavey, Josephine, 2300 Van Ness Ave., San Francisco
Segbarth, Stella, 1459 Harding Ave., Altadena
Shafer, Paul F., 2234 Hollister Ter., Glendale
Shaw, Jeannette, 739 S. Chevy Chase Dr., Glendale
*Sheldon, Mrs. Inez T., Box 580, Ojai
Shepard, Anne Loomis, 928 Eighth Pl., Los Angeles
Siewert, W. R., 1022 La Cadena Ave., Arcadia
Singletary, Mattie S., Fremont School, 1990 Main St., Riverside
Skutt, Charles A., Roosevelt School, Clearwater
Sletten, Theresa C., 933 Lincoln Blvd., Santa Monica
†Sloane, Boyd Lincoln, 1421 Dominion Ave., Pasadena
Smith, Agnes L., 421 Ninth St., Huntington Beach
Smith, Blanche B., 701 New Hampshire Ave., Los Angeles
Smith, Effie E., Frank McCoppin School, Seventh Ave. and Balboa St., San Francisco
Smith, F. B., John Muir School, 3215 Riverside Blvd., Sacramento
Smith, Lucile, 118 W. 41st Pl., Los Angeles
Smith, Margaret H., 546 W. 11th St., Corona
Smith, Marion C., 540 28th St., Oakland
Smith, Mollie A., 2274 Virginia St., Berkeley
Smith, Rose M., 695 S. Ardmore, Los Angeles
Snow, Irene, 2270 Main St., Napa
Snyder, Peter H., 3844 Belmont Ave., San Diego
Snyder, R. W., 546 Rosal Ave., Oakland
Spani, Kate, 4561 Niagara Ave., San Diego
*Spencer, Mrs. Hattie A., Hotel Mt. Lassen, Susanville
Spraul, Erna M., 850 N. Kenmore, Los Angeles
Starr, A. G., 1963 Oakview Dr., Oakland
Stearns, Aletha, 1524 Martel Ave., Hollywood
†Steelhead, Bert Francis, 523 Clement Dr., Glendale
Stephens, Ross, Garfield School, Pasadena
†Stevens, Mrs. Kathleen H., 1285 Burnside Ave., Los Angeles
†Stevenson, Gordon K., 4722 Bancroft St., San Diego
Stewart, Mrs. Emma P., 2108 Cedar Ave., Long Beach
*Stewart, Hugh B., Box 26, Arcata
Stewart, Margaret E., 612 N. Marguerita Ave., Alhambra
*Strand, Bernard J., 709 Oak St., Bellflower
Stull, Helene M., 418 W. 14th St., Santa Monica
Sutton, Lulu H., Marin County, Novato
†Sylvester, Helen Katherine, 3729 Indiana St., San Diego
Tarbell, Della R., 614 N. Brand Blvd., Glendale
Tardelli, Agnes R., Sherman School, Union and Franklin Sts., San Francisco
Taylor, Nelle C., 3907 Dalton Ave., Los Angeles
Teach, Charles Elden, High School Building, San Luis Obispo
Thompson, Mrs. Rose V., 1616 Garth St., Los Angeles
Thornquist, Mrs. Marie Noye, 339 N. Harvard Blvd., Los Angeles
Tibbetts, Mrs. Alice B., 3355 Canfield Ave., Los Angeles
Tibby, Ardella Bitner, Abraham Lincoln School, Compton
Tillman, Florence, 2725 Prince St., Berkeley
*Tiner, Hugh M., Los Angeles County Schools, 240 S. Broadway, Los Angeles
Tingley, Grace W., 4937 Palm Dr., La Canada
Tipton, Doty, 6915 Hawthorne Ave., Hollywood
*†Trott, Frederick L., Jr., 145 N. Teyunga Ave., Burbank
*Tudbury, Mrs. Ethel W., Washington School, Berkeley
Turner, Grace M., Albion School, 220 S. Ave. 18, Los Angeles
Upton, Anne Hale, 1675 Oakdale St., Pasadena
*Vail, Vesta E., 356 Laurel St., Santa Cruz
Van De Goorberg, Wilhelmina, 1606 N. Ave. 55, Los Angeles
Van Loenen, C. Addison, 1640 Carmelita, Laguna Beach
*†Vans, Mrs. Oda Beardsley, 1051 Magnolia Ave., Gardena
Vineyard, Julia Marie, 1933 Third Ave., Los Angeles
Volles, Mrs. Stephenia Hill, 1932 N. Wilton Pl., Los Angeles
Von Hatten, Emma A., 1017 30th St., Sacramento
†Wacaser, Mrs. Helen D., 4962 Iowa Ave., Fresno
Wahlquist, G. L., Box 56, Lone Pine
Waldo, Raymond B., 1509 Weymouth Ave., San Pedro
Walker, Mrs. Nellie L., 4867 Santa Cruz Ave., San Diego
Walker, Stephen L., 130 N. Angus St., Fresno
Wallace, Maude, 374 Hanover Ave., Oakland
Walsh, Alice A., 1325 17th Ave., San Francisco
†Walter, Robert Bruce, 711 Domingo Dr., San Gabriel
Walton, Miles P., Dist. Supt. of Schools, Box 459, Manhattan Beach
Ward, Susie A., 198 Hancock St., San Francisco
Wassum, Clara, 608 W. Main St., Turlock
*Weakley, Guy A., 1200 Main St., El Centro
Webster, Mrs. Barbara Miller, 716 Virginia Ter., Santa Paula
Weeks, Mrs. Emma Firestone, 283 Redondo Ave., Long Beach
Weiser, Anna E., Box 263, Bakersfield
Welday, Samuel O., 2117 Chapala St., Santa Barbara
†Weller, Louise E., 3607 Pershing Dr., San Diego
*Wells, Verna E., Roosevelt School, 924 Halladay, Santa Ana
Wemken, Nellie Opal, 633 Heliotrope Dr., Los Angeles
Whedon, Mrs. Marion F., 312½ S. Spalding Dr., Beverly Hills
Whitaker, Forrest M., 2842½ Sunset Pl., Los Angeles

Whitcomb, Mrs. Irene B., 2449 Gladstone Ave., Covina
Wickersham, Jessie B., 932 Valencia St., Los Angeles
*Widemann, Grace V., Box 134, Gonzales
Wienke, Helen May, 3210 Huntington Blvd., Fresno
Williams, Ruth C., 903 W. Center St., Anaheim
Wilson, Mrs. Ethel C., 206 S. Third St., Alhambra
Wilson, I. C., 4425 E. 11th St., Long Beach
*Wilson, Ray Rollin, 330 Jones St., Ukiah
Winters, Louise R. V., 143 N. Coronado, Los Angeles
Wisler, Mrs. Emma C., 6542 Bella Vista Way, Los Angeles
Witman, Ann M., 1936 Orchard Ave., Glendale
Witman, Elizabeth H., South Park Avenue School, 455 E. Manchester Ave., Los Angeles
Wolleson, Helen S., 124 N. San Marino Ave., San Gabriel
Wonders, Winifred M., 333 Esther St., Long Beach
Wood, Thomas P., 3028 Hill St., Huntington Park
*Wright, Helen R., 711 Third St., Santa Rosa
Young, A. C., 2225 Van Ness Blvd., Fresno
Young, D. M., 1449 Lincoln St., Kingsburg
Young, George Arthur, 5122 Meridian St., Los Angeles
*†Young, Sarah L., 2451 Seminary Way, Oakland
Zimmerman, Bruce L., Longfellow School, Berkeley
*†Zimmerman, F. B., 3500 Mountain Blvd., Oakland

COLORADO

Abbott, Carlotta G., Argonaut Hotel, Denver
*Abbott, Irene, 3260 S. Broadway, Englewood
Barkley, Dell, 32 Carlisle Pl., Pueblo
Bennett, Aubrey, 1314 Monaco St., Denver
Bland, Rose, 627 N. Nevada Ave., Colorado Springs
Brown, Ethel L., 216 N. Cascade Ave., Colorado Springs
Carson, Mary G., 1229 Cook St., Denver
Chapman, James M., 402 N. Walnut St., Colorado Springs
Combs, Ethel L., 2928 W. 28th Ave., Denver
Cordingly, Elizabeth, Thatcher School, Denver
Cornish, Lydia R., 1420 Logan St., Denver
Doull, Frances, 1250 Logan St., Denver
Ellis, Douglas B., 1200 Newport St., Denver
Erb, Edith M., 2870 Raleigh St., Denver
Evans, Dave D., 3321 W. 38th Ave., Denver
Eyer, Myrtle, 307 W. Abriende, Pueblo
Fitzpatrick, Jessie K., 936 Mapleton Ave., Boulder
Ginn, Carl, 2729 W. 35th Ave., Denver
Godsman, Mrs. Charlotte J., 1625 Downing St., Denver
Gormley, Celia, 2410 N. Nevada Ave., Colorado Springs
*Graham, E. Ellis, Portland
*Greear, H. L., Sargent Consolidated School, Monte Vista
Hamilton, Dwight, 3642 S. Bannock St., Englewood
Herrington, Eugene H., 4601 W. 31st Ave., Denver
Holmes, Ethel, 2610 S. Sherman St., Denver
*Johnson, Ellen R., 3860 Idlewild St., Wheatridge
Johnstone, Mrs. Clara F., 2086 Grape St., Denver
Keller, Elizabeth M., 1410 Grant St., Denver
Ketner, Sarah P., Washington Park School, Mississippi Ave. and S. Race St., Denver
Kirkwood, Helen G., 1413 Mesa Ave., Colorado Springs
Klein, Louise, Columbian School, Denver
**†Lind, Nellie V., Stedman School, 29th and Dexter St., Denver
*McKay, Mrs. Edna A., 728 State St., Ft. Morgan
McMeen, George M., 1800 E. Arizona St., Denver
Morgan, Kathryn J., 1101 N. Corona, Colorado Springs
Morton, Max D., Thatcher School, Pueblo
Nelson, Monell V., 430 Lake St., Ft. Morgan
*Newton, Estella, 412 Maple St., Eaton
Noar, Frances, 1101 Columbine St., Denver
Noce, Lillian, 3726 Vallejo St., Denver
O'Boyle, Lila M., 829 Fillmore St., Denver
Orvis, L. B., 1140 Grand Ave., Grand Junction
Peterson, Carrie, 1450 Grant St., Denver
Queree, Pearl, 2914 W. 29th Ave., Denver
*Remick, Nellie A., Acacia Hotel, Colorado Springs
*Ricketts, Blanche, 522 Arapahoe Ave., Boulder
Rishel, John B., Barnum School, Denver
Romick, Nelle, 2140 E. 14th Ave., Denver
Schmalbeck, Lee O., 816 Grand Ave., Grand Junction
*Selig, Mrs. La Vonne N., Box 23, Montrose
Shute, William C., 2651 Vine St., Denver
Simpson, Genevieve, 736 Race St., Denver
Slavens, Leon E., 707 E. Tenth Ave., Denver
*Smith, Luna I., 1513 Ninth Ave., Greeley
Smith, Mrs. Margaret M., 1522 Lafayette St., Denver
Strach, Caroline, 216 E. Routt, Pueblo
*Storey, Ethel M., 411 S. Fifth, Lamar
Stryker, Mary M., 1622 18th St., Boulder
Swanzey, Linah, Bessemer School, Pueblo
Sweet, Mayme, Twenty-fourth Street School, Denver
Swinehart, Blanche L., 308 W. Grant, Pueblo
Walsh, Delia, 404 N. Fifth St., Rocky Ford
Watts, Lillie E., 2246 Eudora St., Denver
Weymouth, Edith, 1032 Clarkson St., Denver
Wheatley, George, 730 Columbine St., Denver
White, Mrs. Julia M., 1557 St. Paul St., Denver
Wiles, Jennie G., 716 W. Baca St., Trinidad
Willey, Gilbert S., University Park School, Denver
Williams, Mrs. Addie M., 1629 Walnut St., Boulder

CONNECTICUT

Adams, Dorothy R., Long Lots Rd., Westport
Allen, Elizabeth, 516 Columbus Ave., New Haven
*Anderson, May F., 396 Main St., Norwalk
*Baker, Frances E., South Grammar School, East Hartford
Baldwin, Lillian T., Honeyspot School, Stratford
Barnes, Percival S., High School Building, East Hartford
Barry, Lena F., 68 Hanover St., Bridgeport
Baumgardt, Maude, Wintergreen Ave., Hamden

Beard, Charles A., New Milford
Bennett, Ada Gray, 186 Courtland Hill, Bridgeport
Bestick, Grace V., 229 Wells St., Bridgeport
Blackham, Florence E., 303 E. Main St., Bridgeport
Blackmer, Victor A., 64 North St., Danbury
Bowes, Lillian E., 550 Hamilton Ave., Waterbury
Brennan, Katharine A., 182 Lloyd St., New Haven
*Bridgett, Alice E., 654 N. Colony Rd., Wallingford
Brown, Helen F., 4 Hillside Pl., Winsted
Carrington, Ralph W., Bunker Hill School, Waterbury
Carroll, Elizabeth, 203 Lakewood Ter., Westville, New Haven
*Condon, Anna A., 74 Garden St., Stamford
Cox, Margretta K., 180 Howe Ave., Shelton
Darrow, Harriet Langenberg, Box 503, Westport
Dean, Stuart, Broad Street School, Plainville
Desmond, D. Giles, Box 94, Tariffville
Donovan, Anna C., 32 Girard Ave., Hartford
*Dorsey, Margaret M., 95 Harmony St., Bridgeport
Dyer, W. P., 30 Sefton Dr., New Britain
Ellis, Eugene W., Farmington High School, Unionville
*Fagan, Anna E., 1167 E. Main St., Waterbury
Fanning, Mary A., Washington Rd., Woodbury
Finnigan, Alice R., 516 Orange St., New Haven
Fish, Stanwood S., 49 Cumberland St., Hartford
Fraser, George L., Byram School, Greenwich
Freeman, Edward S., 34 Powell Pl., Stamford
French, Harold R., John J. Jennings School, Burlington Ave., Bristol
Gessner, Elizabeth E., 124 Mansfield St., New Haven
Gregory, Ellen M., 19 Mead St., New Canaan
Hart, Harry T., 137 Post Rd., Darien
Hasbrook, Clinton F., 172 Wethersfield Ave., Hartford
Hayes, Josephine A., 624 Orange St., New Haven
Holroyd, Ida G., 33 Dora Circle, Bridgeport
Hull, Grace B., 27 Pythian Ave., Torrington
Johnson, Abel E., Smalley School, New Britain
Johnson, William G., 15 Hebron Ave., Glastonbury
Jourdan, Caroline C., 102 W. Main St., Branford
Judd, Edwin B., 17 Russ St., Hartford
Keefe, Margaret L., Hamden High School, Hamden
Kelley, Maude S., 317 Edgewood Ave., New Haven
Knight, Elton E., 87 W. Elm St., New Haven
Knowlton, Lillian D., Benton School, 900 Whalley Ave., New Haven
*Linn, Maynard W., Riverside School, Greenwich
Lockhart, Charles E., Morgan Ave., East Haven
Lyon, Louisabelle, Ridgefield Rd., R. D. 36, Wilton
McCall, Harold, 93 Glenbrook Rd., Stamford
McDermott, Millicent R., Ferry Street School, New Haven
McDonnell, Julia M., 436 High St., Torrington
McGrath, Elizabeth M., 1770 Park Ave., Bridgeport
*Madden, Grace E., New Street School, Danbury
**Malcolm, Elizabeth R., 181 Blake St., New Haven
Mink, Emma Freda, 214 Palisade Ave., Bridgeport
Monahan, Julia A., Washington School, 466 Howard Ave., New Haven
Monroe, Marion E., 185 Jefferson St., Hartford
Mooney, Mary J., 784 Elm St., New Haven
Morehouse, Helen B., 84 Mansfield Ave., Darien
Murphy, Katherine T., Cove School, Stamford
Murphy, S. Maria Rose, 267 Franklin St., New Haven
*Newton, Fred L., Jennings School, New London
O'Connell, Clara T., 27 Pleasant St., Bristol
*O'Loughlin, Thomas F., Chauncey Harris School, 540 New Britain Ave., Hartford
Patterson, Thomas H., Thomas H. Patterson School, First School Dist., Bristol
Rawson, Sarah J., 79 Sargeant St., Hartford
Riggs, F. B., Indian Mountain School, Lakeville
Robie, Everett E., Rice School, Stamford
Sherman, Anne K., 55 Rusling Pl., Bridgeport
Sherman, Jeanette E., Quinnipiac School, 805 Quinnipiac Ave., New Haven
Skehan, Anna M., 80 Charles St., Waterbury
Smith, Minnie H., 201 Center St., West Haven
Steele, Julia M., 45 Holbrook St., Ansonia
Steele, Sarah M., 64 Filbert St., New Haven
Thompson, Audrey M., Hindley School, Darien
Tompkins, Harriett D., Pequot Rd., Southport
Weaver, Alice M., 139 Main St., Norwalk
Whitman, Helen H., 48 N. Main St., West Hartford
*Young, Mrs. Ethel B., Newhall Street School, Hamden
Young, George W., 269 Lyme St., Hartford

DELAWARE

Devine, Sarah S., 421 W. 22nd St., Wilmington
Diviney, Anna V., School No. 19, Oak and Harrison Sts., Wilmington
Doud, Emma M., 1708 Pennsylvania Ave., Wilmington
*Dugan, Mrs. Elva M., 420 W. 21st St., Wilmington
Pritchett, Mrs. Elizabeth W., 2709 Madison St., Wilmington
Riggin, M. Grace, 437 S. Union St., Wilmington
Stahl, H. E., Supt. of Schools, Claymont

DISTRICT OF COLUMBIA

Alton, Maude E., 2624 Garfield St., N. W.
Ballenger, Lou E., 1801 16th St., N. W.
Barnard, Caroline F., 1705 Lanier Pl., N. W.
Bishop, Mrs. Angelia B., 1903 15th St., N. W.
Brawner, Mary Virginia, 4504 Douglas St., N. E.
Brown, Mrs. Bernice B., 415 T St., N. W.
Brown, Miss W. F., 1923 15th St., N. W.

Bush, Grace, 922 F St., N. E.
Clark, Eugene A., Miner Teachers College, Georgia Ave and Euclid St., N. W.
Conway, Mrs. Margarete S., 3900 14th St., N. W.
Cook, Dorothea A., 18 Fifth St., S. E.
Cornell, Mrs. Florence N., John Quincy Adams School, 19th and California Sts., N. W.
Cramer, Bessie Wood, Peabody School, Fifth and C Sts., N. E.
Diliger, Mary A., 3810 Warren St., N. W.
Doonan, Katharine, The Ontario Apts., Ontario Rd. and 18th Sts., N. W.
**Duganne, Mrs. L. R., Truesdell School, Eighth and Ingraham Sts., N. W.
Dulin, Cecilia P., 110 Maryland Ave., N. E.
Eaves, Robert W., Thomson School, 12th and L Sts., N. W.
Ewers, Alys H., 4610 15th St., N. W.
Farrington, Ada M., 1700 Massachusetts Ave., S. E.
Fawcett, Blanche L., 1804 Hoban Rd., N. W.
Foster, Richard R., Asst. Dir., Research Division, Natl. Educ. Assn., 1201 16th St., N. W.
Frank, Mary W., 3816 Warren St., N. W.
Fryer, Thelma E., 500 Rhode Island Ave., N. E.
Givens, Willard E., Exec. Secy., Natl. Educ. Assn., 1201 16th St., N. W.
Goodykoontz, Bess, Asst. U. S. Commr. of Educ., Office of Educ., Dept. of Interior
Gray, Mrs. S. E., 1840 Vermont Ave., N. W.
Green, Elsie E., Whittier School, Fifth and Sheridan Sts., N. W.
Hahn, Julia L., Supvr. Prin., Third Division, Raymond School
Haycock, Robert L., 1606 Longfellow St., N. W.
Hickman, Clara, Rose Lees Hardy School, Foxhall Rd. and Q St., N. W.
†Hubbard, Frank W., Assoc. Dir., Research Division, Natl. Educ. Assn., 1201 16th St., N. W.
Hull, George Russell, 2919 Pennsylvania Ave., S. E.
Leapley, Mrs. Lillian T., 1500 Southern Ave., S. E.
Lind, A. Grace, Supvr. Prin., Fifth Division, Emory School
Lockwood, Margaret M., Horace Mann School, 45th and Newark Sts., N. W.
Lyddane, Margaret R., The Cavalier Hotel, 3500 14th St., N. W.
Lyons, Edith A., Morgan School, 18th and California Sts., N. W.
Malone, Mrs. L. S., 165 Adams St., N. W.
Moore, Margaret, 908 B St., N. E.
Mortimer, Florence C., 1141 New Hampshire Ave., N. W.
O'Hara, Elizabeth, 5407 32nd St., N. W.
Payne, John C., 654 L St., N. E.
Perry, Leon L., 913 P St., N. W.
Pimper, Cora H., 1302 30th St., N. W.
†Pinkston, Eva G., Exec. Secy., Dept. of Elem. Sch. Prin., Natl. Educ. Assn., 1201 16th St., N. W.
Pitts, Clara L., 1705 Kenyon St., N. W.
Renfro, D. I., 1516 12th St., N. W.
Ruediger, Mrs. Imogene I., H. O. Cooke School, 17th St., N. W.
Sanderson, Alice I., 4115 Military Rd., N. W.
Savoy, A. Kiger, 217 T St., N. W.
Scrivener, Emily, 1012 Monroe St., N. E.
Scrivener, Katherine, Langdon School, 20th and Evarts Sts., N. E.
Simmons, Effie P., 1317 R St., N. W.
Smith, A. V., 1827 S St., N. W.
Smith, Mary, 119 Eighth St., S. E.
Stafford, Alphonso O., Harrison School, 13th and V Sts., N. W.
Syphax, John E., 1338 Q St., N. W.
Taylor, Bertha E., 2426 19th St., N. W.
Thompson, M. Caroline, Oxon Hill School, Route 2, Anacostia
Tolliver, R. E., 920 S St., N. W.
Trusheim, Eva M., Congress Heights School, Fifth St. and Nichols Ave., S. E., Congress Heights
Wakeman, Mrs. Laura J., 4817 46th St., N. W.
Wallace, Florence C., 75 Randolph Pl., N. W.
Webb, Ruth K., 5111 42nd St., N. W.
Werner, Mrs. Myrtle King, 501 East Capitol St.
Woodson, Alice M., 2247 12th St., N. W.

FLORIDA

Arrington, Mrs. Stella P., 801 Magnolia Ave., Sanford
Bainum, Mary I., 5420 First Ave., N., St. Petersburg
†Bassett, Edna, Oak Park School, 30th St. and Tenth Ave., Tampa
Beal, Beulah, 151 W. Ninth St., Jacksonville
Beaman, Annie, 1668 Osceola St., Jacksonville
Belcher, Frances, North Ward School, Clearwater
Benson, Olga D., 1051 N. W. 29th Ter., Miami
Bogart, Elizabeth M., 1412 Market St., Jacksonville
*Bulloch, Pearl, 1917 Manuel Rd., Ft. Myers
Byrnes, Mrs. Lorraine G., Shenandoah Elementary School, 2051 S. W. 11th Ter., Miami
Carrier, Mrs. Alice Bingham, 19 Sevilla St., St. Augustine
*Cason, Ernest W., Elementary School, Winter Park
Chapman, Mrs. Virginia, 111 W. Chelsea St., Tampa
Claywell, Henry, 310 E. Idlewild Ave., Tampa
Compton, Mrs. Ruth, Box 1824, Orlando
†Cone, Mrs. Elizabeth, 6020 Floravista Ave., Tampa
Cooke, Nellie E., 123 E. First St., Jacksonville
Cox, Carl S., Lakeland High School, Lakeland
*Crawford, Mrs. W. H., 422 E. Cervantes St., Pensacola
Culver, Mrs. Lola M., 2035 Silver St., Jacksonville
Daughtrey, Mrs. Blanche H., Bradenton
*Dean, Katie, 412 S. W. Fifth Ave., Miami
Delaney, Mrs. Elsie R., Riverside Elementary School, 221 S. W. 12th Ave., Miami
Fairile, Margaret C., 1035 E. Bay St., Jacksonville
Fleagle, Mrs. Luneta, 512 E. Frierson Ave., Tampa
**†Foulks, Frank M., 404 E. Ross Ave., Tampa
Gehan, Frederick E., Caroline Brevard School, Tallahassee
Geiger, Albert J., St. Petersburg High School, St. Petersburg
Gilday, Abigail H., Coral Gables School, Coral Gables
†Gray, Mrs. Florence, 715 Louisiana Ave., Tampa
*Griffin, Edith, 222 E. Ft. King Ave., Ocala
Gwin, Lillian, 2818 Nebraska Ave., Tampa
Hamer, Mrs. Mildred, 2507 North B St., Tampa

Hamilton, Cecil, 1819 Fowles St., Ft. Myers
Hammond, Mrs. Allie M., Seminole School, Tampa
†Hartman, Mrs. Anne, 4210 Barcelona Ave., Tampa
Helms, Mrs. Mildred, 719 First Ave., S. W., Largo
*Hendry, Mrs. Ethel D., 212 W. Imogene St., Arcadia
†Hodges, Mrs. Edna F., 1010 Coral St., Tampa
Hoffman, J. F., 3403 34th St., Tampa
Housh, Annie Lytle, 2602 Herschel St., Jacksonville
Hughes, Florence L., 816 Oak St., Jacksonville
Jordan, Mattie, 2307 Southview Ave., Tampa
*Kelso, Mabel M., 111 17th Ave., S., St. Petersburg
†Kent, Mrs. Mary Louise, 2802 Sitios St., Tampa
†King, Ethel, 915 23rd Ave., Tampa
King, Patti Batey, 609 S. E. Sixth St., Ft. Lauderdale
*Kipp, Robert Earl, Seventh and Myrtle Ave., Sanford
Laney, H. J., Box O, Apopka
Langston, Thomas Hill, 6809 Wellington Ave., Tampa
*Leenhouts, Laura, 3083 N. W. Seventh St., Miami
†McDonald, Bertha, 113 W. Plymouth Ave., Tampa
McIntosh, James L., V. M. Ybor School, 4012 Seminole Ave., Tampa
McWhorter, Lucile, Southside Elementary School, 45 S. W. 13th St., Miami
*†Moon, Robert C., Sealey Memorial School, Box 823, Tallahassee
Morgan, Annie R., 919 Wolfe St., Jacksonville
*Mott, Marie Murphy, 554 Lomax St., Jacksonville
Neighbors, Mrs. Annie W., 3576 Pine St., Jacksonville
Nelson, La Verne, 820 S. Dakota Ave., Tampa
Nelson, Mabel, 820 Dakota Ave., Tampa
Nippert, Helen E., 1014 Third St., N., St. Petersburg
Norris, Mrs. Edith B., 414 E. Sixth St., Jacksonville
Parrish, Mrs. C. W., Box 61, Parrish
Parsons, Rhey Boyd, Florida State College for Women, Tallahassee
*Rice, Mrs. Ora S., Box 1055, Sarasota
Richardson, Mrs. Guignard, Boston Avenue School, De Land
†Shaw, Mrs. Lassie, 6600 Dixon, Tampa
Smith, Guy F., General Delivery, Dundee
Sproull, Katherine F., 1545 Hubbard St., Jacksonville
Stafford, Mrs. Melissa, 909 W. Colonial Dr., Orlando
Stoutamire, Mrs. Dan L., 1336 S. Madison Ave., Clearwater
Swearingen, Olive, 1623 N. Seventh Ave., Pensacola
Upson, Ruth Newell, 828 Oak St., Jacksonville
Vinson, R. A., R. D. 1, Box 412, South Jacksonville
Weatherly, Hazel, 454 N. E. 38th St., Miami
Wilcox, Mrs. Edward B., 320 Jeffords St., Clearwater
Williams, Bessie L., 209 W. Ashley St., Jacksonville
Wolverton, Mrs. Ethel G., 3012 Angeles St., Tampa
Yniestra, Allie, 229 N. Spring St., Pensacola

GEORGIA

Albright, Mrs. T. D., 891 Briarcliff Rd., N. E., Atlanta
Avery, Andrew, County Supt. of Schools, Bainbridge
Barker, Mary C., 685 Myrtle St., N. E., Atlanta
*Beard, Jessie, 1222 Peacock Ave., Columbus
Brenner, Gussie M., Kirkwood School, Atlanta
Burgess, H. O., 1425 Memorial Dr., S. E., Atlanta
*Carreker, Mrs. H. B., 722 Clairmont Ave., Decatur
Cash, Addie, Route 1, College Park
Cash, Pauline, Route 1, College Park
Chamlee, Mrs. J. W., Elementary School, Canton
Chapman, Annie, 345 Gordon Ave., N. E., Atlanta
Collins, Nell, 121 Culver St., Macon
Corrigan, Gertrude, Highland School, 978 North Ave., N. E., Atlanta
Cox, Mrs. Winona S., 1129 S. Main St., Moultrie
Duggan, Sarah Nell, 850 Penn Ave., N. E., Atlanta
Dunwoody, Bessie L., 1299 W. Peachtree St., N. W., Atlanta
Erven, Thomas D., Pine Hill School, Bainbridge
Faver, Kate R., Route 1, Smyrna
Flanagan, Mrs. W. I., 1333 S., Lumpkin St., Athens
Floyd, Kate, Hill Street School, La Grange
Flynn, Lillian R., 156 Seventh St., N. E., Atlanta
Gardner, Bell, Taylor Mill School, Reynolds
*Gardner, Eva, 96 40th St., Columbus
Glenn, Magdalen, 555 University Dr., Athens
Goodman, Mrs. Fielder B., Pearl Stephens School, Macon
Goodwin, Mrs. L. D., Fletcher School, Thomasville
Harris, Mabel H., 836 College St., Macon
Hicks, Cleophas M., 1156 Rosedale Dr., N. E., Atlanta
Hollingsworth, Lois, Sylvan Hills School, Atlanta
Holt, Mamie L., 728 Napier Ave., Macon
Jarrell, Ira, 1444 Stokes Ave., S. W., Atlanta
Jeter, Carolyn V., 371 Tenth St., N. E., Atlanta
Johnson, Mrs. F. A., 904 Beecher St., S. W., Atlanta
Johnson, Lula M., Key School, 811 Capitol Ave., Atlanta
†Jones, Mrs. Richard P., 2579 Brookwood Dr., N. E., Atlanta
Jones, Mrs. Z. W., Brookhaven School, Brookhaven
Kendrick, Margaret C., Jerome Jones School, Atlanta
*Keown, Ben D., West LaFayette School, LaFayette
King, Kate A., 741 Frederica St., N. E., Atlanta
Kingsbery, Lula L., Lula L. Kingsbery School, Atlanta
Landershine, Carrie A., R. F. D. 3, Savannah
Lanier, Clyde, 211 Forsyth Apts., Savannah
Lin, Mary, Mary Lin School, Atlanta
McCorkle, Ruby, Williams Street School, Atlanta
McCune, W. W., Board of Education, Savannah
Mann, Allie, 858 Springdale Rd., N. E., Atlanta

Martin, Pauline, 126 Third Ave., Atlanta
Mathews, C. B., Supt. of Schools, Newman
Miller, Fidelle, 334 Adams St., Decatur
Morris, Avaleen, 777 Williams St., N. W., Atlanta
Newton, Ralph, Supt. of Schools, Drawer 57, Waycross
Nolan, Lucile, 1872 Boulevard, Atlanta
*Osterhout, Mrs. R. D., 1056 Reeder Circle, N. E., Atlanta
Peacock, Clayton W., Supt. of Schools, LaFayette
Pew, Mrs. B. H., 1020 Columbia Ave., N. E., Atlanta
Pollard, Gertrude, Cox-Carlton Hotel, Peachtree St., Atlanta
Pulliam, R. D., Wheeler County High School, Alamo
Purcell, B. D., 602 Linwood Ave., East Point
Rainwater, Hattie, Couch School, Atlanta
**†Rhodes, Maude A., 185 Westminster Dr., N. E., Atlanta
Robinson, Miss M. A., 801 W. 37th St., Savannah
Roddey, Helen, 1230 Peachtree St., N. E., Atlanta
Silvey, Elizabeth, 624 Cumberland Rd., Atlanta
Smith, Anastasia, 1029 Second Ave., Columbus
†Smith, Emma O., 278 College St., Macon
Solomon, Maggie, 1068 W. Peachtree St., Atlanta
Stallings, Lila, 1017 Edmont St., Brunswick
†Standard, Mary, 864 Courtney Dr., N. E., Atlanta
Stubblefield, H. E., A. R. Fortune Grammar School, LaFayette
*Taylor, May, 458 N. Highland Ave., N. E., Atlanta
Thornton, Mrs. Eva L., 206 E. Virginia Ave., College Park
Tuck, Sara E., 1010 McLynn Ave., N. E., Atlanta
Wayne, Mary W., 115 E. 36th St., Savannah
Wesley, Emma, 995 W. Peachtree St., Atlanta
Wesley, Rusha, 995 W. Peachtree St., Atlanta
†Whitworth, Mrs. R. B., Tenth Street School, Atlanta
Wier, Mary Lou, 149 Cobb St., Athens
Wilson, Mrs. Homer L., Box 35, Bolton
Woods, Mary E., 1071 Madison Ave., Athens
Wurm, Lillie, 187 Pine St., N. E., Atlanta

IDAHO

Bell, O. E., Central Junior High School, Idaho Falls
Johnson, Anna, Emerson Elementary School, Idaho Falls
McSorley, M. Lillian, Lewis Clark Hotel, Lewiston
**Norton, Miss Coral M., 406 Franklin St., Boise
Stidwell, Charles A., Box 163, Sandpoint

ILLINOIS

Alexander, E. L., 515 E. Franklin Ave., Edwardsville
Allen, May C., 7748 Ridgeland Ave., Chicago
Allin, Josephine T., Seward School, 4600 S. Hermitage Ave., Chicago
Ammon, C. H., Supt. of Schools, Brookport
Andersen, Will D., 937 N. Harvey Ave., Oak Park
Anderson, Edith V., 203 Sixth Ave., Moline
Anspaugh, George E., Bryant School, 1355 S. Kedvale Ave., Chicago
Astrom, Elsie C., 1222 Sixth Ave., Moline
Bacon, Vivian, Jefferson School, Chicago Heights
Baer, Alice Hogge, 10414 S. State St., Chicago
Barr, H. B., 227 E. North St., Roodhouse
Barrett, Clarence Burton, Supt. of Schools, Argo-Summit
†Bartky, John A., 2860 E. 76th St., Chicago
Bates, Carl E., 944 Warrington Rd., Deerfield
Bauerle, Martha M., 10 S. Mason Ave., Chicago
Beck, Paul H., 706 S. Lombard Ave., Oak Park
Bednar, Christine, 6333 Blackstone Ave., Chicago
Benben, John S., Midlothian Public School, Midlothian
Benham, Morton M., Jefferson School, 25th and Lincoln Ave., East St. Louis
Bielenberg, Emma J., 3634 N. Avers Ave., Chicago
Bjorkland, Alfred, 4813 Winthrop Ave., Chicago
Blakeway, Herbert N., 720 N. Lorel Ave., Chicago
Blazier, Louise F., 8 W. Walton St., Chicago
Blish, Elizabeth M., 6935 Chappel Ave., Chicago
Bolerjack, Hobart, Columbus School, Cicero
Bone, Paul L., 136 E. Second St., Hartford
Born, William T., 1041 Home Ave., Oak Park
Borough, Mary G., 1519 E. 69th Pl., Chicago
Bousfield, Maudelle B., 4548 Forestville Ave., Chicago
Bowman, Flora, 385 Park Ave., Glencoe
Bowyer, Vernon, 1070 W. Jackson Blvd., Chicago
Boyd, Grace Marie, 417 Shenstone Rd., Riverside
Bradshaw, Elizabeth G., Orville T. Bright School, 10740 S. Calhoun Ave., Chicago
Bradshaw, Ruth E., 419 Main St., Aurora
Bright, Orville T., Jr., Flossmoor School, Flossmoor
Bristor, C. C., 706 S. Fourth Ave., Maywood
Brown, Guy H., 4710 Saratoga Ave., Downers Grove
Bruner, Mrs. Olive P., 5435 Magnolia Ave., Chicago
Buckley, Marie G., 2373 E. 70th St., Chicago
Buell, Irma A., 106 Knox Pl., Joliet
Byers, Elvin G., Longfellow School, Oak Park
Byrne, Margaret H., 9912 Ave. H., Chicago
Byrne, Martha A. E., 4220 Monroe St., Chicago
Carlyon, Edward L., 328 N. Maple Ave., Oak Park
Carpenter, Lewis M., 2428 Greenleaf Ave., Chicago
Carr, H. S., 824 N. Washington St., Wheaton
Carroll, Nora M., Mt. Greenwood School, 10851 S. Homan Ave., Chicago
Chandler, Turner C., 7814 Cornell Ave., Chicago
Claxton, Clarence C., 4228 N. Avers St., Chicago
Clickener, Sarah H., Morrisonville
Clinton, Catherine M., 6111 Eberhart Ave., Chicago
Cloyd, Lura Ethel, Willard School, 2119 Sherman Ave., Evanston
Cohler, Milton J., 6537 N. Ashland Ave., Chicago

Collette, Ernest B., 4510 N. Kildare Ave., Chicago
Cordes, Mrs. Eva C., 300 Main St., Evanston
Coulter, Claudine, 2440 State St., Granite City
Crisp, Iva J., Lincoln School, 16th and Elmwood, Berwyn
Cronin, Anna L., 6930 Greenview Ave., Chicago
Cross, Mrs. Maybelle, 6612 Minerva Ave., Chicago
Daggett, Daisy V., 279 W. William St., Decatur
Dalin, Judith H., 910 Third Ave., Rockford
Davis, Lois Margaret, 921 Sheridan Rd., Evanston
Davis, Margaret M., 544 S. State St., Springfield
Dexter, Mrs. Anna B., 1453 Andrews St., Rockford
Dillon, Bessie O., 4144 Greenview Ave., Chicago
Dimmett, W. S., Supt. of Schools, Forest Park
Doniat, Thecla, Spalding School, 1628 Washington Blvd., Chicago
Duffy, Agnes Dana, 3166 Pine Grove Ave., Chicago
Duggan, Mildred M., Raster School, 6936 S. Hermitage Ave., Chicago
Duncan, Kenneth W. 5841 Nickerson Ave., Norwood Park, Chicago
Eddy, Bernice C., 6318 S. Maplewood Ave., Chicago
Elberson, Georgia, 11 N. Gilbert St., Danville
Fahy, Mildred, Peirce School, 1423 Bryn Mawr Ave., Chicago
Fidelia, Sister M., Lourdes High School, 4034 W. 56th St., Chicago
Fink, Stuart D., Northern Illinois State Teachers College, De Kalb
Fitzgerald, James A., 28 N. Franklin, Chicago
Fredeen, Harriet, 321 E. Central Blvd., Kewanee
Gibson, Arthur R., 101 Logan Ave., Geneva
Gilpatrick, Mabel E., 3833 N. Kostner Ave., Chicago
Gould, Paul G., 2109 N. First St., Shelbyville
Graham, Ray, Supt. of Schools, Mason City
Graham, Verne O., Chicago Normal College, 6800 Stewart Ave., Chicago
Greve, Mabel C., 513 Third St., Savanna
Hanlon, Mary R., McKay School, 6901 S. Fairfield Ave., Chicago
†Hansen, Herbert C., 1045 N. Lockwood Ave., Chicago
Hanson, Ernest E., Central School, Woodstock
Harding, Dorothy L., Lake Bluff School, Lake Bluff
Harrington, Ethel K., 8053 Vernon Ave., Chicago
Harvey, Mrs. Clare W., 247 Home Ave., Oak Park
Headley, Mrs. Anna, 212 Pennsylvania Ave., Peoria
Henry, Anna, Christopher School, 51st St. and Artesian Ave., Chicago
Herman, Irene E., 214 W. Jackson St., Woodstock
Herr, Ross, 3452 Drummond, Chicago
Hickes, H. C., Goodwin School, Cicero
Hill, Alvin F., Frankfort
Houghton, Mrs. Marie, Noyes School, Evanston
Houser, L. J., Supt. of Schools, Riverside
Hoveland, Arthur C., Itasca
Hunter, Howard A., Franklin School, Peoria
Hyman, Mrs. Beatrice C., 1400 Rosalie St., Evanston
Jacobson, P. B., University High School, 5820 Venwood, Chicago
Jenkinson, Jennie S., 1669 W. 104th Pl., Chicago
Johnson, A. Milda, 1418 12th St., Moline
Johnson, Edith Ingeborg, 901 Elmwood Ave., Kewanee
Keenan, Robert C., Drake Public School, 2641 Calumet Ave., Chicago
Keener, Edward E., 1018 N. Laramie Ave., La Grange
Kell, Sherman L., 2121 N. Keeler Ave., Chicago
Keller, Anna P., 449 N. Austin Ave., Chicago
Kent, Orla G., Nancy L. Hill School, Aurora
Kimes, Myrtle E., Plum School, Streator
†Kline, Aaron, Pullman School, 521 E. 113th St., Chicago
Knapp, C. E., 713 W. Grand Blvd. S., Springfield
Koehler, Earl L., 120 N. Columbia St., Naperville
Kripner, Mrs. Louise K., 6534 Stewart Ave., Chicago
Kroeger, Florence R., 415 Anthony St., Glen Ellyn
Kull, Helen, 2021 W. 21st St., Chicago
Larimore, Leona E., 4203 Du Bois Blvd., Congress Park
Law, Jennie, McKinley School, 59th and 12th Sts., Cicero
Lawson, D. E., Brush Training School, Carbondale
Lillis, Mrs. Ida Nicely, 5445 Eastview Pk., Chicago
Liska, Josephine, Barry School, 2828 N. Kilbourne Ave., Chicago
Loucks, Mabel R., 3718 N. Keeler Ave., Chicago
Lowe, Mrs. Charlotte, 5816 Harper Ave., Chicago
Lowry, W. R., 1408 High St., Chester
Lyford, Aimee E., 406 Prospect St., Elgin
Lynch, Adelaide L., 7934 Kimbark Ave., Chicago
McCauley, Elizabeth S., 1635 Ridge Ave., Evanston
McClure, Oren B., 219 S. Washington St., Du Quoin
McGuire, Honora, 7300 Prairie Ave., Chicago
McInerney, Julia, Parkside School, 6938 East End Ave., Chicago
McKelvey, F. H., 118 S. Rockford Ave., Rockford
McMahon, Mrs. Edna T., 10431 S. Hamilton Ave., Chicago
McSwain, E. T., Northwestern University, School of Educ., Evanston
MacConkey, June H., 2610 Potwyne Pl., Chicago
†Mack, Helen A., 417 Prospect St., Alton
Maddock, Alice E., 9648 Vanderpoel Ave., Chicago
Maddock, Rosa G., 9648 Vanderpoel Ave., Chicago
Manning, Ada M., Lincoln School, Lombard
Mason, Grace S., 640 Woodland Pk., Chicago
Mattocks, Marie M., 914 LaFayette Pkwy., Chicago
Mead, Alice J., 1162 W. Macon St., Decatur
Meyers, Mrs. Edna R., 10224 Prospect Ave., Chicago
Miller, Anna, 15 Prairie Ave., Danville
Mirrielees, Ruchiel, 9830 Prospect Ave., Chicago
Mitchell, Ethelyn J., 176 Oak St., Elgin

Morstrom, Lois C., Ross School, 6059 Wabash Ave., Chicago
Murphy, Joseph, 309 Fredonia, Peoria
Murray, Ethel, M., 6719 Sheridan Rd., Chicago
Mussio, Harry, Burnham School, 59th and 18th Sts., Cicero
Myers, Vinnie, 210 N. Walnut St., Danville
Nicholson, Eleanor G., 529 Melrose, Chicago
Nyquist, Alice, 1720 11th Ave., Moline
O'Brien, John L., 5868 N. Kolmar Ave., Chicago
O'Brien, Margaret G., 517 Fisher Ave., Rockford
O'Connor, Mary A., 737 S. Float Ave., Freeport
Patrick, Mary L., 6030 Kimbark Ave., Chicago
Paulsrud, Alice, 6241 Winthrop Ave., Chicago
Paxton, Agnes M., 206½ E. State St., Jacksonville
Pearsons, M. Evlyn, 1031 Dempster St., Evanston
Penstone, Clara M., Coonley School, 4056 N. Leavill, Chicago
†Peters, Florentine, Garfield School, Chicago Heights
Peterson, Bena M., 126 Harrison St., De Kalb
Phinney, Isabelle H., 1128 N. Church St., Rockford
Phipps, George Carl, J. N. Thorp School, 8914 Buffalo Ave., Chicago
Phipps, Madge, 4453 Beacon St., Chicago
Pierce, Mrs. Pearl, 248 S. 21st Ave., Maywood
Poust, Roy M., 5116 W. 23rd Pl., Cicero
Prater, Belle, Cossitt School, La Grange
Pratt, Clarence W., 608 Hamilton, Peoria
Price, R. H., School Dist. No. 107, Highland Park
Ramsey, G. C., 3030 D. Mobile Ave., Chicago
Rape, Arthur O., 637 N. Kenilworth Ave., Oak Park
Rathbun, Ruth M., Mayfair School, 4626 N. Knox Ave., Chicago
Reynolds, E. W., Dover Elementary School, Dover
Reynolds, Mary E., 9810 Exchange Ave., Chicago
Reynolds, Mary Isabel, 1543 Glenlake Ave., Chicago
Richardson, Mrs. Grace H., 1119 Maple Ave., Evanston
Rickard, Garrett E., 1315 Rosedale Ave., Chicago
Roach, Mary Margaret, 125 N. Edward St., Decatur
Robinson, John L., 202 N. School St., Normal
Robor, Rena, 400 N. Tenth St., Mt. Vernon
Rohrer, Marie A., 6828 Palatine Ave., Chicago
Rowley, Ruby Elizabeth, North Shore Hotel, Evanston
Sanford, Helen M., 1940 Sherman Ave., Evanston
Schimek, Cecelia B., Mason School, 1830 S. Keeler Ave., Chicago
Schwede, Charles W., 5527 Maryland Ave., Chicago
Serviss, Gladys H., 729 Galena Blvd., Aurora
Shield, Ruth, 912 N. Monroe St., Peoria
Shoop, Clarence, Lincoln School, 61st Ave. and 35th St., Cicero
Smith, Anne L., 105 Sherman St., Joliet
Smith, George O., Supt. of Schools, Princeton
Spurgin, William H., 11157 S. Campbell Ave., Chicago
Steinmetz, Kathryn, 8045 Drexel Ave., Chicago
Stoker, Frank W., Fuller School, 537 E. 42nd St., Chicago
Strange, W. J. B., Cleveland School, Niles Center
Strawe, Walter V., Washington School, 1000 Grand Ave., Chicago
Strossman, Marion R., C. M. Bardwell School, Aurora
Stullken, Edward H., 5464 W. Walton St., Chicago
Sullivan, Mary M., 6719 Sheridan Rd., Chicago
Swane, Mrs. Alma, Mt. Vernon School, 10540 S. Morgan St., Chicago
†Swarthout, Walter E., Emerson School, Maywood
Tate, Harry L., Eli Whitney School, 2815 S. Komensky Ave., Chicago
Theis, Flora H., 701 W. Mulberry St., Bloomington
Thomas, W. A., 303 Waukegan Ave., Highwood
Tidy, Mercedes W., Commonwealth School, Waukegan
Todd, Henrietta M., North Shore Hotel, Evanston
Travis, M. B., Supt. of Schools, Hinsdale
Trump, J. Lloyd, Marengo Grade School, Marengo
Uhlir, Arthur, 4221 N. Keeler Ave., Chicago
Unnewehr, Charles A., 206 N. Lockwood Ave., Chicago
**Vayette, Kenneth E., 204 N. Perry Ave., Peoria
Vergowe, Clara S., 5322 Glenwood Ave., Chicago
Vigles, Maude E., 932 S. Webster St., Decatur
Voight, Ida, 415 E. Pleasant St., Freeport
Walker, Cilena G., 372 Normal Pkwy., Chicago
Walls, Mary H., 266 Du Page St., Elgin
Watson, Norman E., Supt. of Schools, Northbrook
Webster, Mrs. Frances, 819 Madison St., Evanston
Wells, Jennie E., 1495 W. Macon St., Decatur
Wetherbee, Ralph H., 11725 Perry Ave., Chicago
Wheeler, Effie J., 7020 Jeffrey Ave., Chicago
Wheelock, Alice H., 713-A 18th St., Moline
Whitaker, Ruth L., 10862 S. Bell Ave., Chicago
White, Catherine, Sherlock School, 54th Ave. and 23rd St., Cicero
White, J. Kay, General Pershing School, 37th St. and East Ave., Berwyn
*Willams, Claude L., 7830 Cornell Ave., Chicago
Williamson, Lilias M., 6622 University Ave., Chicago
Wilson, Elizabeth C., Delano School, 3937 Wilcox St., Chicago
Wilson, Irvin A., 437 S. Stone Ave., La Grange
Winkler, Clyde, Cicero School, 23rd and 49th Sts., Cicero
Wright, Clark G., Supt., School Dist. No. 108, Highland Park
Young, May E., Cannady School, East St. Louis

INDIANA

†Adams, Burton Q., Bloomingdale School, Ft. Wayne
Alexander, Mrs. Margaret, 306 E. Ewing, South Bend
Allison, Emma Mae, 2168 N. Capitol Ave., Indianapolis
Allman, H. B., Supt. of Schools, Muncie

Anderson, Lillian P., 128 Chapin St., South Bend
Banta, Fay M., 2620 N. Alabama St., Indianapolis
Baugh, William E., 1235 W. 25th St., Indianapolis
Bedford, Anna Pearl, 3335 N. Meridian St., Indianapolis
†Best, William E., Lincoln High School, Evansville
Bingham, H. Beth, 215 E. Third St., Mishawaka
Black, Ernest J., 3749 Guilford Ave., Indianapolis
Black, Grace M., 615 N. Pennsylvania St., Indianapolis
Boggs, Rose E., 13 Howard Court, Richmond
Brooks, Ross, 1015 Taylor Ave., Evansville
†Brown, Edythe J., Pres., Dept. of Elem. Sch. Prin., 1936-37, Natl. Educ. Assn., Mar Main Arms, South Bend
Brumbaugh, J. C., Muessel Elementary and Junior High School, South Bend
Burmaster, Rosa M., 219½ S. Jefferson St., Muncie
*Buscher, Gertrude, 2928 Park Ave., Indianapolis
Butcher, W. A., 802 Ironwood Dr., South Bend
Byers, Alfred S., Stanley Hall School, Evansville
Byers, E. A., 1448 S. Ninth St., Terre Haute
*Carter, Charlotte, 6121 Haverford Ave., Indianapolis
Cary, Jeanette S., 2027 Boulevard Pl., Indianapolis
Chapman, Nellie, 5035 Kenwood Ave., Indianapolis
Clark, Albert W., 1238 Michigan St., Hammond
Clark, J. R., McKinley School, Winchester
Cochran, Alton W., 887 W. High St., Middletown
Collins, V. B., 424 Woodrow Ave., New Albany
Crodian, J. P., Supt. of Schools, 215 E. Sixth St., Peru
Dalman, Murray A., 3137 Broadway, Indianapolis
Deem, Estella, 506 S. Third St., Vincennes
Denzler, Berena, 5160 Pleasant Run Pkwy., Indianapolis
Diggs, Elder W., 1908 Highland Pl., Indianapolis
Dougherty, Robert A., South Side School, Whiting
Drake, Flora E., School No. 21, 2815 English Ave., Indianapolis
Dudley, D. R., John M. Culver School, Evansville
Dunlop, Jane M., 4 S. W. Third St., Richmond
Dyer, Lary Everett, Fairview Elementary Schools, 719 W. Seventh St., Bloomington
Echolds, Frank E., 5635 Beechwood Ave., Indianapolis
Eller, Mrs. Lola Stuart, 2502 E. 58th St., Indianapolis
*Eppert, Geraldine, 2828 N. Illinois St., Indianapolis
Ertel, Ruby, Graylynn Hotel, Indianapolis
†Fields, Thomas, 4325 Fairfield Ave., Ft. Wayne
Fisher, George H., 402 N. Linwood Ave., Indianapolis
Flick, E. Perry, 930 Lake St., Hobart
Foltz, Elsie, 2427 Garfield Ave., Terre Haute
Foster, Nancy L., 5947 Hyslop Pl., Hammond
Funk, Olive K., Public School No. 45, 2301 Park Ave., Indianapolis
**Galvin, Cecelia, School No. 3, 23 N. Rural St., Indianapolis
*Gibbard, Minnie, La Salle School, Mishawaka
Goss, Mrs. Jeanne A., 3520 Fall Creek Blvd., Indianapolis
Gossett, W. Harold, 630 E. 51st St., Indianapolis
*Granger, Mrs. Grace A., School No. 46, Indianapolis
Hall, Edith B., 3253 N. Pennsylvania St., Indianapolis
Hall, L. E., 1219 N. Tuxedo St., Indianapolis
Hamill, Florence, 1705 Olive St., Indianapolis
Hamilton, Otto T., Oaklandon
Hampton, Charles G., 917 W. Main St., Muncie
Hanna, Laura E., 2038 Central Ave., Indianapolis
Hansen, Otillia E., 126 W. Sixth St., Michigan City
Hatch, Mrs. Stella, 842 N. West St., Indianapolis
Hayes, George L., School No. 26, 819 N. California St., Indianapolis
Hayward, O. B., 4727 Pine Ave., Hammond
Helphinstine, Ida B., 2944 Cornell St., Indianapolis
*†Hendricks, Clyde W., 1209 Charlotte Ave., Ft. Wayne
Herbst, Frieda, 966 N. Belle View Pl., Indianapolis
*Hill, Adah, School No. 22, Indianapolis
Hite, Fred A., Elder School, South Bend
Howe, J. Edwin, 423 S. Grand Ave., Evansville
*Hudson, Mrs. Henrietta W., School No. 73, 4101 E. 30th St., Indianapolis
Ingleright, Allegra J., 228 S. St. Joseph St., South Bend
*Ivey, Edna M., Franklin School, 4215 Alder St., East Chicago
James, Emory C., 1306 Finley St., Indianapolis
Johnson, Hazel Bates, 2709 Highland Pl., Indianapolis
Johnson, W. Bina, 1261 King Ave., Indianapolis
Jones, Mrs. Rosa A., School No. 79, 4804 E. 30th St., Indanapolis
Jones, Sara, 302 N. Van Rensselaer St., Rensselaer
†Kapnick, George C., Hanna School, Ft. Wayne
Keller, Mabel, School No. 70, 510 E. 46th St., Indianapolis
Kelley, Harriet C., 1401 S. State St., Indianapolis
Kern, Mrs. Huldah T., 711 E. 34th St., Indianapolis
Kimber, Mrs. Grace W., School No. 47, 1240 W. Ray St., Indianapolis
Kirby, Elizabeth, 6021 Bellefontaine St., Indianapolis
Kirk, M. R., Wheeler School, Evansville
Knight, H. G., 226 Buckingham Dr., Indianapolis
Knowles, Mrs. Jeannette B., 85 N. Holmes Ave., Indianapolis
Krug, John C., 857 Bellemeade Ave., Evansville
Kurtz, Mrs. Clio, 740 W. 26th St., Indianapolis
*Lacey, Mrs. Georgia H., 140 E. 36th St., Indianapolis
†Lant, Kenneth A., R. R. 5, Evansville
Lee, Ruby Gray, 3231 Park Ave., Indianapolis
Leeds, Elizabeth, 766 Jackson St., Gary
*†Lemme, Carl W., 1820 Bayard Park Dr., Evansville

Lemon, Mary Morgan, 22 S 17th St., Richmond
Lenon, E. M., Columbia School, Evansville
Loeper, Helen, 1508 N. Alabama St., Indianapolis
*Lykins, Charles E., Harrison Elementary School, R. R. 4, Muncie
McCarty, Adelaide, 3330 N. Meridian St., Indianapolis
McCormick, Albert T., 2019 Indiana Ave., Connersville
McCoy, Marlin W., R. R. 1, Wheatland
McGee, Mary, 224 E. Ninth St., Indianapolis
Mahoney, Agnes, 4227 Broadway, Indianapolis
Malone, Julia, Lincoln School, South Bend
Mangrum, W. V., 764 S. Harlan Ave., Evansville
Marbury, Mrs. Vivian W., School No. 87, 2402 Paris Ave., Indianapolis
Metzler, Roy L., R. R. 2, South Bend
Miller, R. B., George Rogers Clark School, Whiting
Moran, H. A., Box 333, Mishawaka
Morgan, Mary E., 717 E. 48th St., Indianapolis
†Morris, John M., South Wayne School, Ft. Wayne
Morrison, E. L., 314 Sunnyside Ave., Aurora
Murray, M. C., Supt. of Schools, Michigan City
Nessler, Augusta, 1034 N. Tacoma Ave., Indianapolis
Nolcox, Matthias, 2866 Highland Pl., Indianapolis
*Norris, E. L., 3331 Guilford Ave., Indianapolis
Norton, Anabel, 3107 Cleveland Ave., Hammond
O'Mara, Elizabeth, 25 N. State Ave., Indianapolis
Orr, Mrs. Mildred B., 3422 N. Colorado St., Indianapolis
Owen, John J., Woodrow Wilson School, 7544 Madison Ave., Hammond
Pennington, Dorothy, 402 N. Meridian St., Indianapolis
Popp, Freda M., 1821 N. Alabama St., Indianapolis
Price, Maude J., School No. 78, 456 N. Sherman Dr., Indianapolis
Rafter, Miss Agda, 916½ E. Broadway, Logansport
Ramey, Belle, 718 E. 34th St., Indianapolis
Rankin, Mrs. Vivian, 2551 N. Delaware St., Indianapolis
Ray, Mrs. Mary S., 3849 N. Delaware St., Indianapolis
Reade, Anna R., 4360 Washington Blvd., Indianapolis
Reimold, Crissie E., 1113 N. St. Joseph St., South Bend
Rentschler, Mrs. Cora, 5158 N. Illinois St., Indianapolis
Reynard, Mrs. May, 611 Portage Ave., South Bend
Rielag, Corinne, 962 N. Pennsylvania St., Indianapolis
Riker, Jeanette, 1807 Ruckle St., Indianapolis
Riley, Herman M., 3000 Cottage Ave., Indianapolis
†Robertson, O. Dale, Nebraska School, Ft. Wayne
*Rupp, Carrie B., Rea School, Terre Haute
Russell, Jessie C., 5936 Forrest Lane, Indianapolis
Schmidt, Mrs. Mabel, 212 E. 46th St., Indianapolis
*Scott, Elizabeth H., 3025 N. Meridian St., Indianapolis
Seaton, Mary B., Hamilton School, Ft. Wayne
Sherwood, Hollace C., Marion Township Consolidated School, Mitchell
†Shriner, Richard E., 4709 Indiana Ave., Ft. Wayne
Snapp, C. Ross, 1824 Sheridan Ave., Whiting
Soules, Gertrude F., Deming and Collett Schools, Terre Haute
Stafford, Laurence T., 245 W. Maple Rd., Indianapolis
Steely, G. A., 1512 South A St., Richmond
Stout, Hazel V., P. W. Payne School, Franklin
Stump, Merlin B., School No. 35, 2201 Madison Ave., Indianapolis
Suchanek, Minnie M., 117 N. St. Louis Blvd., South Bend
Sunthimer, Charles E., 3358 College Ave., Indianapolis
Swihart, O. M., 309 Donmoyer, South Bend
Swope, Lena, 2101 N. New Jersey St., Indianapolis
Tarney, Estelle M., 621 Henricks St., Anderson
Thomas, Charlotte, School No. 25, Indianapolis
†Thomas, E. Glenn, 2201 Pleasant Ave., Ft. Wayne
Thompson, Rose H., School No. 56, 2400 Columbia Ave., Indianapolis
Thornburgh, John W., 5167 Guilford Ave., Indianapolis
Torrence, Anna, 3330 N. Meridian St., Indianapolis
Walker, John S., 301 Queen St., Muncie
Watson, Mozelle, Riley School, E. Eighth St., Michigan City
Weld, Mildred A., 1508 N. Alabama St., Indianapolis
Wiles, Eva Y., School No. 7, 748 Bates St., Indianapolis
*Witt, Elizabeth R., 610 Bosart Ave., Indianapolis
†Wolf, Floyd, John S. Irwin School, Ft. Wayne
Wright, R. G., Linden School, South Bend
Wright, Wendell W., School of Education, Indiana University, Bloomington
Wyrick, Adda, 2448 Broadway, Indianapolis
Zook, Kenneth, R. R. 1, Elkhart

IOWA

*Aarvig, Bertha O., 1234 Second Ave., N., Ft. Dodge
Baker, J. Ella, 1523 23rd St., Des Moines
Beverley, Florence, 406 Walnut Court Apt., Waterloo
†Bovee, Earl E., 4315 Orleans Ave., Sioux City
Bradshaw, Alice, Brown Hotel, Des Moines
*Campbell, Isabella J., 711 Second St., S. W., Cedar Rapids
Carl, Elizabeth, 317-B Walnut Court, Waterloo
*Chidester, June, 301 W. Washington St., Fairfield
Connors, June, 1815 Grandview Blvd., Sioux City
Cowan, Lois A., 306 Sixth St., S. E., Cedar Rapids
Dailey, Ada M., 32 Oakland Court, Council Bluffs
*Davitt, Naomi, 410 Boone St., Boone
Finch, Bertha, 3900 Sixth Ave., Sioux City
**FitzGerald, James E., 1821 Ross St., Sioux City
Grupp, Mrs. Mabel B., 138 Harrison St., Waterloo

*Hays, Leslie M., Pierce School, Council Bluffs
*Henry, Hazel D., 218 Front St., Colfax
*Holtman, Edith C., 210 B. Ave., E., Oskaloosa
Ivory, Anna E., Anderson Court, 2 Glen Ave., Council Bluffs
*Johnson, Bess R., 1241 40th St., Des Moines
Kaltenheuser, Florence M., 423 W. Court, Winterset
*Kelley, D. J., Supt. of Schools, Tipton
Kitch, R. L., 456 Burton Ave., Sioux City
Larson, J. L., Supt. of Schools, Ames
Lyon, Georgia West, Bryant School, Sioux City
McBroom, Maude, University Elementary School, Iowa City
Mary, Sister Ruth, Laboratory School, Mount St. Francis, Dubuque
Matthews, Laura P., 5115 Grand Ave., Des Moines
Michael, Sister Mary, Holy Ghost School, Dubuque
Montillon, Adeline B., 1402 First Ave., N. W., Cedar Rapids
*Newcomer, Mrs. Mabel, 123 S. Fourth St., Clear Lake
North, W. T., Supt. of Schools, Corydon
Olson, Lillian B., Box 173, Spencer
Parr, Cora A., 1353 Ninth St., Des Moines
Pendray, Mary E., 321 N. Market St., Oskaloosa
Phillips, Ruth, Public Schools, Cedar Rapids
Porter, Willis P., Horace Mann School, Iowa City
Quigley, Georgia, 928 30th St., Des Moines
*Rownd, Nellie M., 1113 W. 23rd St., Cedar Falls
Samuelson, Agnes, State Supt. of Public Instruction, State Capitol, Des Moines
Shedd, Harry P., Anthon
Stoddard, George D., Graduate College, State University of Iowa, Iowa City
Stohlgren, Anna, 1918 E. 13th St., Des Moines
Taff, Lucy, Wahkonsa School, Ft. Dodge
Tapper, Inga B., 348 Forest Dr., S. E., Cedar Rapids
Toohey, Blanche V., 3607 Ingersoll Ave., Des Moines
Troutner, Grace, Victoria Hotel, Des Moines
Umpleby, Frances, 2936 Brattleboro, Des Moines
Walker, Minnie M., 1315 Maple St., Des Moines
Walters, Marjorie, 325 16th St., N. E., Cedar Repids
Wilcox, Leona, 1916 44th St., Des Moines
Winzer, Paula B., 327 S. Garfield Ave., Burlington
Zinn, D. D., Webster School, 2208 Grandview, Sioux City

KANSAS

Adams, Alice, 2122 State, Kansas City
Adams, Lillie, 422 Parallel, Kansas City
Allen, Lora, 708 S. Catalpa St., Pittsburg
Anderson, Melonee, 2115 N. Fifth, Kansas City
Arnold, Viola, Clara Barton School, Kansas City
Benscheidt, Ella, 227 W. 12th St., Hutchinson
Boner, Helen, Irving School, Kansas City
Bonwell, W. A., 645 N. Volutsia, Wichita
*Botkin, Ethel, 102 E. 17th St., Hutchinson
Brown, Dora, Ingalls School, Kansas City
Browne, Margaret, Hotel Kansan, Topeka
Burright, Nina, 422 S. Millwood, Wichita
Campbell, Cora G., Box 304, Junction City
Comer, Mrs. Lena, Emerson School, Kansas City
Comstock, Roy C., Grade School, Sedan
Conway, Agnes C., 1243 Coolidge, Wichita
Crump, Leah, Kealing School, Kansas City
Dowd, Gertrude, 424 S. Millwood, Wichita
Drisko, Carrie, 2119 State St., Kansas City
Easter, Bruce C., Dunbar School, Salina
Eastman, Grace, 28 W. Ninth St., Hutchinson
Elliott, Virginia, Lincoln School, Kansas City
Erickson, Anna, Major Hudson School, Kansas City
Evans, Esther, 421 W. Harvey, Wellington
**Evans, Myrtle M., Abbott School, 15th and Troup Ave., Kansas City
Glasgow, Mattie, 429 N. 17th St., Kansas City
Gray, Maude, 236 N. 18th St., Kansas City
Harris, A. H., 617 Stewart Ave., Kansas City
Hartford, May, 108 E. 14th St., Hutchinson
*Hefflefinger, Lillie, 226 W. Second, Junction City
*Henry, Emma L., 323 S. Bluff Ave., Anthony
Hillerman, Vina E., 501 Exchange St., Emporia
Hogue, Charles F., 917 W. Sixth St., Ottawa
Hubanks, Mrs. Estella, 434 N. 15th St., Wichita
Hudson, Jane, 408 E. First Ave., Hutchinson
*Hunt, Ira E., 116 Iowa Ave., Holton
Jarvis, Claire, 793 N. 32nd St., Kansas City
*Jones, Lucy, Gould Hotel, Kansas City
Kauffman, L. L., Randolph School, 1336 Duane, Topeka
Kier, Hazel, Parker School, Kansas City
King, Eva A., 1½ E. Main St., Chanute
Kinsey, Gladys, 438 N. 18th St., Kansas City
Kiser, Florence, R. R. 4, Lawrence
Kittell, Mrs. Martha, 1902 West St., Topeka
Lamb, Clara S., Gould Hotel, Kansas City
Langford, Nellie, Central Park School, Topeka
Lewis, Daniel W., 1204 Everett, Kansas City
McConnell, Mabel, 35 N. Seventh St., Kansas City
McKinley, Bertha, 3111 Parallel, Kansas City
McNaughton, Lola, Frances Willard School, Kansas City
Mahaffie, Ella M., Park School, Kansas City
Mann, Harriet, 3920 Cambridge, Kansas City
Martin, Mrs. M. R., 312 N. Lincoln, Chanute
Martin, Minnie, 1118 Haskell, Kansas City
Meeks, Hazel, Snow School, Kansas City
Miller, Elizabeth, Grund Hotel, Kansas City
Miller, Elizabeth S., 4132 Rainbow Blvd., Kansas City
Miller, Frederic N., 3904 Carlisle Rd., R. R. 6, Kansas City
Moore, Wilmie, 329 E. Sherman, Hutchinson
Murphy, J. W., Supt. of Schools, Augusta
Nelson, Mary C., Bancroft School, Kansas City
Nelson, Sarah, 3944 Cambridge, Kansas City
Norton, Leslie L., Prin. of Elementary Schools, Richmond
Peed, Julia A., 414 Crescent Blvd., Hutchinson

Perkins, Josie, 205 W. 14th St., Hutchinson
Peyton, Mrs. Pearl K., 1029 S. Evergreen, Chanute
*Pfefferkorn, Mary M., 744 Osage St., Leavenworth
*Ratzlaff, L. M., Plains Consolidated School, Plains
Rebstein, Clara O., 511 N. Belmont, Wichita
Reynolds, Ferne, 701 North B St., Arkansas City
Rice, Pearl, McKinley School, Kansas City
Rippey, Winifred, Box 214, Kansas City
Roach, Herschel M., Grade School, Bluff City
Roberts, Grace, Longfellow School, Kansas City
Robinson, Ella V., 1216 Washington Blvd., Kansas City
Sare, Mrs. Emma H., 717 S. Lafayette St., Chanute
Saunders, Jessie M., B. T. Washington School, Kansas City
Sheffer, W. E., Supt. of Schools, Manhattan
Singer, Mrs. Mary J., 341 N. Topeka Ave., Wichita
Smith, Aura, 2007 Sandusky, Kansas City
Sparks, Elizabeth A., Central School, Kansas City
Streeter, Helen, 400 N. 16th St., Kansas City
Sunter, Ethel, 1603 Dodd, Kansas City
Tebow, Eric T., Supt. of Schools, Harper
Thomas, Zoe, 202 N. 23rd St., Kansas City
Thornburg, Mrs. Winnie C., 817 S. Spruce, Wichita
Tribue, Leota, Phillips School, Kansas City
Vincent, Mary, Elementary School, Fowler
Vogenitz, Mrs. May H., 420 E. 15th Ave., Hutchinson
*Wine, E. C., 1147 Perry, Wichita

KENTUCKY

Bowling, J. D., Lothair
*Boyd, Fred, 416 N. Limestone, Lexington
*Bradner, J. W., Supt. of Schools, Middlesboro
Brown, G. H., 314 Pearl St., Louisville
Chapman, Edith A., Crabbe School, Ashland
Cole, Mary I., Western Kentucky Teachers College, Box 165, Bowling Green
Coons, Etta B., 173 Woodland Ave., Lexington
Daugherty, R. E., Board of Education, Louisville
Edmonds, Mrs. Eva F., 710 Central Ave., Lexington
Esch, Bianca, 1857 Princeton Dr., Louisville
Ewan, Mrs. I. V., 228 Irvine Rd., Lexington
Faulkner, Hattie M., Means School, Ashland
Giles, Henry, 123 River St., Harlan
**Gotherman, Edward E., Jefferson Davis School, Lexington
Greene, C. G., Box 383, Harlan
*Haney, Mrs. John F., Box 444, Catlettsburg
Hill, Mrs. W. C., Wylie School, Ashland
*Howard, Willis, Harlan City Elementary School, Harlan
Huskey, John F., Ninth District School, 32nd and Graff Sts., Covington
Johnson, Sheila, Samuel Woodfill School, Ft. Thomas
Kelley, Annelle, 352 S. Broadway, Lexington
*Kelley, Nora S., I. N. Bloom School, Lucia Ave., Louisville
Lancaster, J. W., City Schools, Georgetown
Lovely, Lucile, 141 Owsley Ave., Lexington
Lowe, Mrs. Herman, The Training School, Western Kentucky State Teachers College, Bowling Green
*McClelland, Bertha L., 3204 Winchester Ave., Ashland
*McDaniel, Lottie, Virginia Street School, Hopkinsville
Martin, Pearl, Box 122, Simpsonville
Masner, Olie, 132 W. High St., Lexington
Norsworthy, E. M., Loyall High School, Loyall
Parsons, Curtis, Kitts
Perkins, Montez, Box 213, Stanford
Pitt, F. N., 4435 Fifth St., Louisville
Procter, Sue, 906 N. Ft. Thomas Ave., Ft. Thomas
Rees, Rupert S., 25 W. 32nd St., Covington
*Reibert, Lydia, 1306 Highland Ave., Louisville
*Rippetoe, B. Elford, Box 494, Middlesboro
*Robertson, Louise, 1379 Tyler Park Dr., Louisville
Rouse, Julia A., Park Hills School, Covington
Schultz, M. J., Middletown Elementary School, Middletown
Smith, Jean L., 140 E. Maxwell St., Lexington
Smith, Mrs. Lucy H., Booker T. Washington School, Lexington
Smith, R. L., Covington
*Spurgin, Lucy, 1416 Brook St., Louisville
*Stutz, Elsa, 2210 Sherwood, Louisville
*Tate, Virginia, 220 Broadway, Madisonville
*Taylor, Mrs. Ellen L., 2329 W. Walnut St., Louisville
*Toliver, Mrs. Edna L., Maple Avenue School, Danville
*Von Donhoff, Ida, R. F. D. 2, Box 193, Louisville
Walker, Mary V., Belmont School, Hopkinsville
Ward, Nora H., Southgate Street School, Newport
Weaver, Helen, California School, 1638 W. Kentucky St., Louisville
*Weibel, Elise, 2210 Sherwood, Louisville
*Wellenvoss, Nora E., 1612 Beechwood Ave., Louisville
*Whittinghill, R. T., Hazard
Willett, Mattie M., 2319 Hale Ave., Louisville
Winebarger, W. L., Graham Consolidated School, Graham

LOUISIANA

Abrams, Octavie E., Andrew H. Wilson School, 3617 General Pershing St., New Orleans
Abrams, Selma, 2735 Octavia St., New Orleans
Aiken, E. S., Rapides Parish School Board, Alexandria
Anderson, Oscar B., Union Grove School, Route 3, Ruston
Armstrong, Maude C., 2738 Milan St., New Orleans
Bailey, O. K., Sterlington
Bains, Mary, Box 248, Shreveport
Barrett, Ellen T., Robert E. Lee School, 1607 S. Carrollton, Ave., New Orleans
Bartholf, Harriet, 842 Prospect Ave., Shreveport
Baudint, A. Leonie, 4849 Chestnut St., New Orleans
Becker, Ernest O., Thomas Jefferson School, 4716 Annunciation St., New Orleans
Bell, Charles B., 2907 Milan St., New Orleans
Betzer, Emma, Lakeview School, 5931 Milne Ave., New Orleans
Bourgeois, Lionel J., McDonogh School No. 18, 1133 St. Ann St., New Orleans

Brandao, Eva A., McDonogh School No. 9, 1650 N. Rocheblave St., New Orleans
Burney, W. H., Municipal Boy's Home, 5420 Franklin Ave., New Orleans
Causey, J. P., 502 S. Washington St., Bastrop
Christian, Josephine C., Gentilly School, 4035 Frenchmen St., New Orleans
Coburn, Ida M., McDonogh School No. 12, 3800 St. Claude Ave., New Orleans
Coghill, Mary D., 2113 Lapeyrouse St., New Orleans
Cohen, Miriam, A. D. Crossman School, 4407 S. Carrollton Ave., New Orleans
Collette, Mrs. Ida R., 704 Iris St., Lake Charles
Collins, Mrs. Lorna K., Box 473, Rayville
Council, Sallie, 2237 Octavia St., New Orleans
Danner, Elizabeth L., McDonogh School No. 14, 1116 Jefferson Ave., New Orleans
Dardis, H. C., Washington School, St. Claude Ave. and Alvar St., New Orleans
Dedeaux, Maude R., 3425 La Salle St., New Orleans
Delaney, J. M., Pineville Grammar School, Pineville
Dieck, Elfrieda, John Dibert School, 4217 Orleans St., New Orleans
Dingle, Mary M., 612 Egan St., Shreveport
†Dixon, Florence E., 2624 Verbena St., New Orleans
†Doerr, Loretta R., 721 St. Philip, New Orleans
Dudenhefer, Mary A., Thomas J. Semmes School, 1008 Jourdan Ave., New Orleans
Ferran, Rose, 930 N. Broad St., New Orleans
Goldenberg, Rachel, 1128 Dalzell, Shreveport
Grehan, Carrie, 1691 Robert St., New Orleans
Hanley, Agnes, McDonogh School No. 23, 719 S. Carrollton Ave., New Orleans
Harte, A. M., 340 S. Olympia St., New Orleans
Hildebrandt, Josephine E., 3650 Constance St., New Orleans
**†Hinrichs, Amy H., 7336 Hurst St., New Orleans
Howe, Mary H., 1736 Valmont St., New Orleans
Jackson, Eleanor C., Frank T. Howard School No. 2, 3601 Camp St., New Orleans
Karr, Edna, Belleville School, 813 Pelican Ave., New Orleans
Keitz, Henrietta C., Gentilly Terrace School, 4720 Painters St., New Orleans
Kennedy, Anna F., McDonogh School No. 16, 1815 St. Claude Ave., New Orleans
Leclare, Virginia V., 5493 Canal Blvd., New Orleans
Leverich, Fanny I., 1663 Soniat St., New Orleans
Limmer, Evie D., 828 Second St., New Orleans
Littlejohn, Augusta Pugh, 1221 Leontine St., New Orleans
Lum, J. L., Longstreet
McBride, A. A., Lafayette
McCloskey, Mary I., Beauregard School, 4621 Canal St., New Orleans
Magendie, Estelle L., 731 Dauphine St., New Orleans
Markey, Ruth, McDonogh School No. 19, 5909 St. Claude Ave., New Orleans
Molony, Alice J., 2306 Peniston St., New Orleans
Moore, Loretta, Robert C. Davey School, 1307 Dryades St., New Orleans
Murphy, Ellen L., McDonogh School No. 11, 2009 Palmyra St., New Orleans
Nuttall, Mrs. D. J., 2949 Midway, Shreveport
O'Connor, Alice, William O. Rogers School, 2327 St. Philip St., New Orleans
Perry, Ruby V., 5625 Loyola Ave., New Orleans
Peterson, Ingree, Donner School, Donner
Pfeiffer, Henrietta O., 5720 Dauphine St., New Orleans
Poncet, Aimee J., 800 N. Rendon St., New Orleans
Roger, Rita M., McDonogh School No. 10, 2407 Baronne St., New Orleans
Rordam, C. J., 521 Exposition Blvd., New Orleans
Schuster, Hattie L., 1538 Creswell St., Shreveport
Short, Alice, 118 E. 73rd St., Shreveport
Smith, Mrs. H. P., Box 3206, West Monroe
Stockley, Callie L., 1817 Calhoun St., New Orleans
Strassel, May, 220 Verret St., New Orleans
†Sullivan, Violet M., 1105 Jefferson Ave., New Orleans
Sylvest, Murphy J., Franklinton Elementary School, Franklinton
Thomas, Josephine, 4512 Baudin St., New Orleans
Tubre, B., Rosenthal School, Alexandria
Turner, C. B., Supt. of Schools, Baton Rouge
Vaughan, Mary G., 229 Bermuda St., New Orleans
White, Mariah D., 901 Cherokee St., New Orleans
Whitlow, Fannie R., Laurel-McDonogh School No. 1, 2232 Laurel St., New Orleans
Will, Alma, Alexander Dimitry School, 716 Felicity St., New Orleans
Williams, Fannie C., 1922 Louisiana Ave., New Orleans
Wilson, Florence, Lafayette School, 2727 S. Carrollton Ave., New Orleans
Wright, L. Zenobia, 2515 St. Philip St., New Orleans

MAINE

Cullen, William M., 178 College St., Lewiston
Pratt, Mrs. Edna L., Box 107, Topsham
Teague, Grace L., 137 College St., Lewiston

MARYLAND

Adams, Margaret, 5301 Bosworth Ave., Baltimore
Baskerville, Esther V., 2231 Madison Ave., Baltimore
*Beckenbaugh, Isabella, 2208 Virginia Ave., Hagerstown
Bell, Mrs., Edna Correll, 2932 St. Paul St., Baltimore
Blonskey, Lula M., 407 Valley St., Cumberland
Botsford, Mrs. Jane E., 305 Decatur St., Cumberland
Bourke, Jessie S., East Linthicum Heights
Boustead, Jessie, 723 W. North Ave., Baltimore
Brain, Earl, Hill Street School, Frostburg
Broening, Mary L., 2 Millbrook Rd., Baltimore
Bryant, Slater W., Jr., Pasadena Consolidated School, Pasadena
Burger, Mary H., Washington Street School, Frederick
Carroll, Agnes, 451 Henderson Blvd., Cumberland
Carroll, James G., Hampstead Hill School No. 47, Linwood Ave. and Fleet St., Baltimore
Carter, Estelle B., The Teacherage, Annapolis St., Annapolis
Cleaves, Frances M., 221 Howard St., Elkton

*Click, Rosalie R., Oakland Elementary School, Oakland
Copes, Ella, 9138 Thornhill Rd., Silver Spring
Coulbourne, Alice Mae, Elementary School, Princess Anne
Craig, Madie E., 21 Hamilton St., Brentwood
Crawford, Ethel, Elementary School, Thurmont
Dellone, Augusta, General Beadle School No. 23, Gough and Wolfe Sts., Baltimore
Dennis, Mrs. William E., 2008 Druid Hill Ave., Baltimore
Didier, Claudia B., 4 E. 30th St., Baltimore
Dowling, Nell, Westernport
Eckhardt, Myrtle, 105 S. Center St., Cumberland
Fatkin, William G., Public School, Luke
Fuller, Althea R., 830 Green St., Cumberland
Gains, Helen O'Boyle, Mitchellville
Gareis, Margaret, 4511 Marfield Ave., Baltimore
Glantz, Minnie M., 2002 Kennedy Ave., Baltimore
Goode, Hazel N., 311 W. Potomac St., Brunswick
Griffin, Edna Grooms, 1601 McCulloh St., Baltimore
Griffin, Mrs. Helen Albright, 115 Grand Ave., Cumberland
Griggs, William T., School No. 119, 2039 Division St., Baltimore
Harney, Margaret A., 1412 Reisterstown Rd., Pikesville
Henderson, Elmer A., School No. 101, Caroline and Jefferson Sts., Baltimore
*Hill, Mary C., 400 Camden Ave., Salisbury
Hoover, L. Mabel, 1771 Homestead St., Baltimore
*Hopkins, Mrs. Marguerite E. L., 586 Eastern Ave., Eastport, Annapolis
Iden, Josie M., Crellin
Jones, Charles W., 1143 N. Carey St., Baltimore
Jones, E. Romaine, School No. 107, Laurens St. near Gilmor, Baltimore
Jones, Robert W., Jackson School, Lonaconing
Jones, Rosena C., East Salisbury School, Pittsville
Kerr, Mary C., 2130 Bolton St., Baltimore
*Krieg, Ella V., Parkway School, Frederick
Landon, Oscar B., Pine St., Crisfield
McCall, Mildred L., Riverdale School, Riverdale
McGeady, Loretto, Box 605, Cumberland
McKnight, Sue, 101 Columbia St., Cumberland
Magers, Ida R., 1801 Poplar Grove St., Baltimore
Manley, John F., Public School, Frostburg
*Manning, Annie Lee, 3421 Mondawmin Ave., Baltimore
Morgan, Gertrude E., Grammar School, Centreville
Morris, Frances B., R. D. 2, Chestertown
Muesse, Katherine F., 1248 N. Broadway, Baltimore
*Nichols, Dorothy V., 6402 Connecticut Ave., Chevy Chase
Nowell, Margaret L., Tracy's School, Shady Side
Pryor, Glen, Lantz
Puffinberger, Irene, 119 Fifth St., Cumberland
*Reed, Mrs. Catherine T., Mt. Rainier School, Mt. Rainier
*Riggin, Mrs. Marion N., 7 E. Chesapeake Ave., Crisfield
Roberts, Clarence J., 2323 Ivy Ave., Baltimore
Robinson, Louise, 631 Tunbridge Rd., Baltimore
Roland, Mrs. Elsie Hill, Flintstone
Rose, Anna F., Chevy Chase Elementary School, Rosemary St., Chevy Chase
Sanders, Grace S., 2111 St. Paul St., Baltimore
Schaut, M. Grace, 3312 W. North Ave., Baltimore
Schluderberg, George W., S. Playfield St., Dundalk
Screen, Isabelle, Narrows Park, Cumberland
Simmons, Mary E., 523 E St., Sparrows Point
Smithson, Clara E., 3306 Clifton Ave., Baltimore
Stabler, Mrs. Mary C., Ednor
Stevenson, Mrs. Margaret C., 2733 N. Charles St., Baltimore
Stieg, May L., Elementary School No. 88, Wildwood Pkwy. near Edmondson Ave., Baltimore
Stromberg, Helen, 3505 Taney Rd., Baltimore
Stromberg, Martha, 3505 Taney Rd., Baltimore
Sultzer, Mary F., School No. 51, 34th and Frisby Sts., Baltimore
Tallaferro, Sallie C., School No. 83, Lakewood Ave. and Fayette St., Baltimore
Thompson, A. May, 402 S. Second St., Denton
Tilghman, Helen G., School No. 231, Baltimore
Turnbull, Josephine, 2102 Rosedale St., Baltimore
Tyson, Mildred E., 2709 Hamilton Ave., Baltimore
*Upham, Mrs. Margaret S., 211 Washington St., Cumberland
Waesche, Mrs. Charlotte S., Mitchellville
Watkins, Lida E., 626 Orpington Rd., Baltimore
Watts, Adah, 813 N. Fremont Ave., Baltimore
Weglein, David E., Supt. of Schools, Madison and LaFayette Aves., Baltimore
Wenner, E. Virginia, Middletown Elementary School, Brunswick
White, Sue B., Hampstead Hill School No. 47, Linwood Ave. and Fleet St., Baltimore
Wiers, Mary M., School No. 48, Hollins and Monroe Sts., Baltimore
Willison, Mildred E., 401 Decatur St., Cumberland

MASSACHUSETTS

Alderman, Etta L., 39 Hanover St., West Springfield
Allen, Grace A., 25 Bacheller St., Lynn
Annis, Ruth E., 120 Bellingham Ave., Revere
Atkins, Robert S., Thomas N. Hart School, South Boston
Austin, W. Scott, 10 Pontiac Rd., Quincy
Barrows, Howard F., Box 82, Falmouth
Barry, Agnes E., 1961 Commonwealth Ave., Brighton
Barry, Mary A., 58 Proctor St., Salem
Barry, William J., 108 Warren St., Roxbury
Bates, William Lester, Lowell School District, Center and Mozart Sts., Jamaica Plain
Baylies, Stella H., 80 Hanover St., Fall River
Bemis, Fanny M., Robert O. Morris School, Springfield
Billings, Catharina W., 32 Coolidge Rd., West Medford

Bliss, Carrie W., 233 Arnold St., New Bedford
Bowker, Rosa M., 161 High St., Springfield
Bozoian, K. Merton, Century Grade School, Belchertown
Brassil, Theresa N., Bright School, Waltham,
Briggs, Elizabeth M., Ingraham and Donaghy Schools, New Bedford
Buckingham, B. R., 15 Ashburton Pl., Boston
Bulkley, Fannie A., 21 Washington St., Gloucester
Burnell, Martha M., 12 Maple Ave., Bridgewater
Burt, Martha G., South Amherst School, South Amherst
Canty, William P., Horace Mann School, Everett
Carbee, Katharine L., Balch School, Norwood
Carney, Mary C., 196 Central St., Springfield
Caton, Anne J., 35 Converse St., Wakefield
Chase, Sara E., Washington School, Springfield
Cheney, Mrs. Bessie B., Priest Street School, Leominster
Chevalier, Ada E., Pierce School, Brookline
Churchill, Clarence E., Ralph Waldo Emerson School, Newton Upper Falls
Clagg, J. Henry, Centre School, Everett
Clark, Kathrine M., 108 Dudley St., Medford
Clark, Linna E., 12 Arbella Rd., Dorchester
Cook, Louis D., 2 Morgan Ter., New Bedford
Copland, Janet F., Dean School, Stoneham
Corish, Gertrude L., 86 Mill St., New Bedford
Cota, Ardell M., Cary School, Chelsea
Cragin, S. Albert, 156 S. Main, Reading
Cronan, Mary H., Robinson-Valentine Schools, Chicopee
Cunningham, Mary E., Tatnuck School, Worcester
Currier, William G., 181 South St., Hyannis
†Cushing, Lena, Jonathan Maynard School, Framingham
Daniels, Laura, Acushnet Avenue School, Springfield
Daniels, Nellie F., 56 W. Elm St., Brockton
Davis, Bertha S., 43 E. Emerson St., Melrose
Davison, Mrs. Louisa M., LaFayette School, Shute St., Everett
Davison, Margaret J., Samuel Bowles School, 24 Bowles Pk., Springfield
Desmarais, Laura B., 206 Main St., Southbridge
Dingley, Vivian A., 20 Ware St., Cambridge
Dodge, Gertrude M., 28 Channing St., Worcester
Doherty, Alice M., 4 Gilmore St., Everett
Donovan, James A., 855 E. Fifth St., South Boston
Doyle, Blanche E., 44 Crosman Ave., Beach Bluff
Easton, Norman S., Quequechan St., Fall River
Emerson, Edith W., Russell School, Arlington
Enright, Helen A., 22 Jean Rd., Arlington
Fisher, G. Milton, Woodland Street School, Worcester
Flagg, Sadie E., 36 Temple St., Springfield
Fleming, John P., A. B. Bruce Grammar School, Lawrence
Fletcher, Helen M., 31 Thompson St., Springfield
Forbush, L. Mabel, 9 Alder St., Waltham
Forster, Bertha E., Brooks School, West Medford
Fuller, Flora E., 107 Appleton St., Arlington
Furber, Mary A., Roosevelt School, Framingham
Gainsman, Edith A., 2-A Marble St., Worcester
Gartland, Emma L., 9 Washington St., New Bedford
Gay, Florence I., Supvr. of Elem. Educ., Dept. of Educ., State House, Boston
Goodnow, Mrs. Gladys L., 216 Davis St., Greenfield
Goodspeed, Alice L., Capen School, Dedham
Gorman, John F., 60 Bellevue Ave., Winthrop
Graham, Elizabeth, Job C. Tripp School, Fairhaven
Graham, John H., 15 Huron Ave., Cambridge
Harding, Elizabeth G., 23 Essex St., Beverly
Hatch, Bertha C., 3 Mt. Vernon St. Melrose
Hathaway, Bertha A. C., 43 Ocean St., New Bedford
Hawkinson, Emma S., 29 Crosby St., Webster
Hayes, Mary A., 64 Prichard St., Fitchburg
Hedberg, Agnes H., Winslow School, Norwood
Henderson, Grace H., Winslow School, Tyngsboro
Henderson, Jennie M., 57 Birch St., Roslindale
Hicks, Edith M., 17 Conomo Ave., East Lynn
**Higgins, Effie Grace, 27 Marianne Rd., Waltham
Higgins, Ethel G., Hardy School, Arlington
Hill, Benjamin J., 757 Highland Ave., Needham Heights
Hogan, John J., John R. Rollins School, Lawrence
Holman, Hilda, Annie F. Warren School, Wellesley Hills
Howard, Stella M., Chapin School, Willimansett
Hunt, Nellie B., 32 Great Woods Rd., Lynn
Jenkins, Emma F., 56 Perry St. Brookline
Jenkins, Florence S., 70 Maywood St., Worcester
Jenney, Charles A., Russell School, Brockton
Johnson, Ethel M., 11 Burrill Ave., Lynn
Jones, Helen P., 36 Curve St., Waltham
Joyce, Helen M., 14 Maple St., Framingham
Kanter, Marion R., R. W. Emerson School, Roxbury
Keenan, Vincent A., 59 Bellevue Hill Rd., West Roxbury
Keller, Roy E., Supt. of Schools, Manchester
Kerrigan, Katharine E., 2 Clement St., Worcester
Lahan, Anna F., 51 Birchwood Rd., Methuen
Larrabee, Ernest A., Bruce Ave., Shrewsberry
Latchford, Mary E., 578 Pleasant St., Worcester
Lawlor, Edward A., Gilbert E. Hood School, Lawrence
Leach, Luthera M., 42 Ellis St., Brockton
Leach, Roland M., Still River Rd., Harvard
Legro, Edna S., 14 Elsmere Ave., Lynn

Leonard, Eliot B., 810 Main St., Wakefield
Lusk, L. Elizabeth, 1802 Beacon St., Brookline
McAvinnue, Joseph A., 339 Mammoth Rd., Lowell
McCarthy, Stella L., Jireh Swift School, New Bedford
McIntire, Ralph A., 18 Park St., Florence
McMullen, Charles B., Centerville Estates, Centerville
MacCallum, Mildred, Frederick Harris School, Springfield
Mathews, Maud A., 71 Philips St., Fall River
Metcalf, Lucie A., 9 Washburn Ter., Brookline
Mileham, Hazel B., Mayflower Inn, Needham
Miller, Florence M., 54 Bloomfield St., Dorchester
Molly, Mary G., 146 Veazie St., North Adams
Morrissey, Ellen E., 246 Main St., Indian Orchard
Newell, Elizabeth T., 65 Spring St., Medford
Niland, Anna M., 202 Byron St., East Boston
O'Brien, Julia R., 4 Railroad Ave., Norwood
Oliver, Grace E., 31 Millbrook H, Worcester
O'Rourke, Helen M., 23 Gardner St., Peabody
Patterson, Wilhelmina, 266 Pleasant St., Marblehead
Perkins, Mary I., 586 Eastern Ave., East Lynn
Phemister, Alice G., 308 High St., West Medford
Pierce, Arthur E., Box 9, Reading
Potter, Zulette, 101 Beach St., Revere
Pottle, Annie C., 89 Adams St., Waltham
Preston, Alice M., 292 Dodge St., Beverly
Priest, Maud B., Thomas Hill School, Waltham
Ramsdell, Alice E., Topley School, Springfield
Raymond, Ward, Weir Grammar School, Taunton
Reddy, Joseph A., William E. Endicott Dist., Glenway and Harvard Sts., Boston
Reid, Gertrude L., 50 Randall Ave., East Weymouth
Remon, Ruth E., 13 Juniper Ave., Salem
Richardson, Bertha, 56 Ft. Pleasant Ave., Springfield
Richardson, Mary E., 50 Fairview St., East Dedham
Riese, Helen M., 22 Allerton St., Plymouth
Ryan, Nellie A., 19 Pleasant St., Springfield
Salmon, John J., 27 Blake St., Cambridge
Sauer, Edith, Kensington Avenue School, Springfield
Sears, Louise B., 9 Williams St., Taunton
Seward, Elsie P., 15-A Jason St., Arlington
Sherman, Lida F., No. County Rd., Osterville
Silva, Theodore R., Adams School, Quincy
Small, Lillian G., Lewis School, Lynn
Southmayd, Pearl A., 15 Armory St., Springfield
Starkey, Netty A., 7 Moore Ave, Worcester
Stott, Helen Maud, 38 Crescent St., Franklin
Stratton, Alice I., Woodrow Wilson School, Framingham
Stuart, Herman H., Coolidge School, Main St., Melrose
Sullivan, Annie G., 349 Whipple St., Fall River
Sullivan, Mary V., 2 Lucian St., Worcester
Sullivan, Maude H., 29 Holbrook St., North Adams
Swasey, Marion H., 58 Maple St., New Bedford
Sweeney, Joanna, 146 Cottage St., New Bedford
Sweeney, Margaret E., 73 Main St., Quincy
Sweet, Emily, 22 Hammond St., Waltham
Taylor, Charles H., Edward Devotion School, Brookline
Towne, Lillian M., 15 Barrows St., Allston
Vaughan, Louise W., 20 Nixon St., Dorchester
Vose, Wilda L., Callahan School, Norwood
Wainwright, Lottie W., 533 Broadway, Fall River
Washburn, Anna C., 3 Mt. Vernon St., Melrose
Wentworth, Florence A., Box 255, Walpole
Willard, Addie I., Edward B. Newton School, Winthrop
Williams, Winnie M., 24 Bertram St., Beverly
Wilson, Sara E., 25 Crandall St., Adams
Wingate, Louise, State Teachers College, Fitchburg
Wood, Francis O., 72 Whittier Rd., Medford
Woodbury, Charles H., 4 Lakecroft Court, Melrose
Woodward, Mrs. Lovina H., Lawrence Street School, Framingham
Yeomans, Rosa A., 118 Atlantic Ave., Revere
Ziersch, Anna L., 55 Linden St., Allston

MICHIGAN

Alexander, Mary Loretta, 15 E. Kirby, Detroit
Allan, Jennie, 2136 Harding, Detroit
Allmendinger, W. H., 17501 Brush, Detroit
Alt, Mary A., 1120 St. Beaumont, Detroit
Alward, Marian E., Vetal School, 14200 Westwood, Detroit
Anderson, Elsie I., 905 Merton Rd., Detroit
Anderson, Jennie, Sylvester Manor, 224 E. Court St., Flint
Andries, Ida K., 2000 Edison, Detroit
Andrus, Beatrice, 2632 Chicago Blvd., Detroit
Arehard, Ira J., 11315 Rosemary Ave., Detroit
Armstrong, Donald C., Higgenbotham School, 20119 Wisconsin, Detroit
Atkinson, F. H., Ford School, Highland Park
Ayres, F. M., Supt. of Schools, Dundee
Bachman, Sophie C., Majeske School, 2139 Trombly Ave., Detroit
Baird, James, Lingemann School, 567 Montclair Ave., Detroit
Baker, Guy L., 113 W. Kenilworth, Royal Oak
Bammel, Romelda, 311 LaFayette Ave., Bay City
Barlow, Carl J., 947 Seward, Detroit
Bates, Guy, Marshall School, 1255 State Fair, Detroit
Bates, Helena M., 9594 American, Detroit
Bates, Warner, J., Pulaski School, Hamtramck
Beard, Harriet E., 237 California, Detroit
Beattie, Grace E., Marxhausen School, 5082 Cadillac, Detroit
Bechtold, R. H., Longfellow Elementary and Junior High School, Flint
Beck, Carl G., 8100 Curtis, Detroit
Beckman, Edith A., 5393 Linsdale, Detroit
Begole, Jenniebelle, 3421 W. Chicago Blvd., Detroit
Beier, Mildred M., 171½ Crocker Blvd., Mt. Clemens
Belisle, John H., Winterhalter School, 12121 Broad St., Detroit

Benette, Fred L., 920 Washington Ave., Escanaba
Bergener, Pauline, 3993 Humboldt, Detroit
Bessole, Abraham Donn., 16150 Ohio, Detroit
Birkham, George, Coolidge School, 4875 Greenway, Detroit
Bloom, Walter, 13141 Twelfth, Detroit
Bolton, Frederick R., Moore School, 1000 Alger, Detroit
Booth, Evelyn, 14223 Southampton, Detroit
Boston, Fannie E., 587 Emerson, Detroit
Bott, Helen, 3917 McClellan, Detroit
Bowen, Harold D., 8203 Morris Circle E., Detroit
Bowles, Maude S., 1413 Field, Detroit
Bradley, Mrs. Fanny, Kearsley Street School, Flint
Braude, Esther, 2740 Richton, Detroit
Brewer, Jessie M., 18 Porter St., Pontiac
Brice, Mrs. Tillie, 3916 Montclair, Detroit
Broegger, E. J., 3730 Seminole, Detroit
Broehm, Clara, 4833 Ogden, Detroit
**†Browe, Herman, 1354 Broadway, Detroit
Browe, Walter, 9206 Avis, Detroit
Brown, Mary M., 5536 St. Antoine, Detroit
Brown, Harold E., 12067 Findlay, Detroit
Buckley, Dorothy, Angell School, Ann Arbor
Burgwin, Mignon, 3622 Pulford, Detroit
Burk, Helen J., 5116 S. Martindale, Detroit
Burke, E. A., Route 1, Belleville
Burns, Hortense E., 2202 Calvert, Detroit
Burt, Ethel V., 16611 Lawton Ave., Detroit
Bushnell Nina M., 507 Thomson St., Flint
Buxton, Elaine, 16411 Curtis, Detroit
Campbell, Charlotte, 634 E. Channing, Ferndale
Carlson, E. C., 260 N. Perry St., Pontiac
Carlson, Eileen, 2800 E. Davison, Detroit
Carpenter, Ralph R., Van Zile School, 2915 Outer Dr., E., Detroit
Carroll, Agnes, 1651 Atkinson Ave., Detroit
Carroll, Mae B., Guyton School, 1651 Atkinson Ave., Detroit
Carter, Winifred J., 7479 Stockton, Detroit
Caswell, Inez E., 13120 Wildemere, Detroit
Charbonneau, Anna M., 2934 Clairmount, Detroit
Chase, Martha B., 808 Bush St., Jackson
Church, Frank H., Lincoln School, Detroit
Cleveland, J. Arlene, 278½ Auburn Ave., Pontiac
†Clow, Jennie M., 2924 Ferry Park Ave., Detroit
Coates, Elizabeth M., 2705 Lapeer St., Flint
Cobel, Florence, 16745 Lamphere Ave., Detroit
Collar, Lovina, Holbrook School, Hamtramck
Collins, Florence, 81½ S. Johnson Ave., Pontiac
Collins, Oard, 1471 Maple, Detroit
Cooney, Joseph, 7840 Wagner, Detroit
Correvont, H. Earle, Harding School, Kalamazoo
Cousins, Esther J., 3318 Whitney Ave., Detroit
Cox, Agnes L., 61 Fairgrove Ave., Pontiac
Crane, Mrs. Mary E., 1592 Fifth St., Muskegon
Creswell, Grace O., 2464 Lothrop St., Detroit
Crisman, Sarah, 8869 W. LaFayette, Detroit
Crosby, Bertha E., 5917 Vermont, Detroit
Cross, Sydnie M., King School, 13130 Grove St., Detroit
Crudder, Lillian, 15755 Bremen, Detroit
Crull, Howard D., Acting Supt. of Schools, Board of Educ., Birmingham
Crumley, Josephine V., 9084 Beverly Court, Detroit
Crysler, Rose, Courville School, 144 Longwood Ave., W., Detroit
Culhane, Josephine, Martin School, Flint
Curtis, Eva M., 1030 Grand Traverse, Flint
Curtiss, Dale, 14034 Abington St., Detroit
Curtiss, Florence E., 205 Tuxedo, Detroit
Davis, Irene C., 905 Merton Rd., Detroit
Davison, Ann S., 4607 Seebaldt, Detroit
Davison, Ethel, Houghten School, 16745 Lamphere, Detroit
Dawson, Dorothy, 2311 Linden, Detroit
Dawson, Edwin, 10825 Fenkell, Detroit
Deacon, Wallace G., 38 Wellesley Dr., Pleasant Ridge, Royal Oak
Dealy, Etta R., 823 Military, Detroit
Dell, George, 5220 Spokane, Detroit
De Manigold, Mary L. G., 1031 Weyburn Ave., Detroit
Dixon, Walter E., 4833 Ogden, Detroit
Docter, Agnes C., 1191 Virginia Pk., Detroit
Doherty, Mary C., 5244 Spokane, Detroit
Donovan, Alice H., 94 W. Willis, Detroit
Dorland, Ida, 301 N. Chilson St., Bay City
Doyen, Gertrude, 1251 17th, Detroit
Drouillard, Axie, 4390 W. Jefferson, Ecorse
Drouillard, Mary G., 3518 W. Warren, Detroit
Drouin, Alice, 1063 Beaconsfield, Grosse Pointe Park
Dunbar, Helen, 2141 Belvidere, Detroit
Dumon, Lucie, 6006 Seneca, Detroit
Dunn, Ida, 15125 Schoolcraft, Detroit
Eck, Ruth J., 100 E. Hancock, Detroit
Edmonson, J. B., School of Education, University of Michigan, Ann Arbor
Egan, Nora L., 2672 W. Grand Blvd., Detroit
Egeler, Ethel E., 35246 Park St., Wayne
Elliott, Myrtle A., 1037 Ashmun St., Sault Ste. Marie
Ellsworth, Bert B., 3840 Russell St., Detroit
Ellsworth, Mrs. Edith Shaw, 6533 16th St., Detroit
Ellsworth, Frank E., Teachers College, Kalamazoo
Engel, Erma L., White School, 5161 Charles, Detroit
Erman, Lillie, 2431 Pingree Ave., Detroit
Estabrook, Eudora P., Diamond School, Grand Rapids
Evans, Lucille, 1821 Cherry, Detroit
Fairbairn, Miss Marion D., 2110 Park Ave., Detroit
Falvey, Stella K., 1464 E. Congress, Detroit
Farr, Helen, 40 Davenport, Detroit
Feaheny, Adele, 8100 Curtis, Detroit
Fee, Lena M., 712 S. Oakley St., Saginaw, W. S.
Fernette, Adele M., 2110 Philip, Detroit
Firestone, Mrs. Myrtle Bevan, University Elementary School, Univ. of Michigan, Ann Arbor
Firth, Roxie Andrews, 7346 Dernes Ave., Dearborn
Fleming, Jennie M., 1971 Longfellow Ave., Detroit
Ford, Marian M., 10059 Crocuslawn, Detroit
Forner, Robert R., 3211 Hazelwood, Detroit
Forsman, Bertha L., 100 Pallister, Detroit
Fouch, Mrs. Jennie B., 217 Burr Oak St., Kalamazoo

Fowles, Maude, 1374 Somerset Dr., Grossé Pointe Park
Fox, Louise, 4365 Newport, Detroit
Fraser, Marjorie F., 2189 Montclair, Detroit
Frederick, Magdalene, Quarton School, Birmingham
Froelich, Dorothea E., 504 Hendri Blvd., Royal Oak
Froh, Alma, 1168 Seward, Detroit
Fuller, Burns, 17583 Fielding, Detroit
Geletzke, Emma, 530 Colonial, Detroit
Geyer, Eldon C., Willard Library Building, Battle Creek
Gibbons, Jane Winifred, Jones School, N. Division St., Ann Arbor
Gibson, Ruth A., 721 N. Ninth St., St. Clair
Gifford, Ilah B., 3250 W. Chicago, Detroit
Gilday, Jane A., McFarlane School, 8919 N. Clarendon, Detroit
Gladden, Theron A., 11682 Birwood, Detroit
Gonne, Edythe, 2281 W. Grand Blvd., Detroit
Gordon, Donald C., 211 Westminster, Detroit
Gragg, H. H., 12316 Ohio, Detroit
Graham, Albert A., 901 Calvert, Detroit
Grahman, Eunice J., 1406 Field Ave., Detroit
Grant, Margaret W., 9765 N. Martindale, Detroit
Gregory, Arnold, Raupp School, Lincoln Park
Green, Loa, 247 N. Rose St., Mt. Clemens
Green, Minnie Gow, 3348 Kipling, Berkley
Green, Tamar, 2775 Maybury, Detroit
Greene, Myrtle, 730 Fifth St., Jackson
Grettenberger, R. A., Imlay City
Guild, Ella M., 224 E. Court St., Flint
Guilloz, Mabelle E., 4900 E. Hildale, Detroit
Halama, James A., Box 506, Bessemer
Haley, Nelle, 920 Court St., Saginaw, W. S.
Hall, Isabell, 288 Josephine Ave., Detroit
Hamilton, Esther, 16545 Huntington Rd., Rosedale Pk., Detroit
Hanlon, Eunice M., 15369 Gilchrist, Detroit
Hansen, Meta, 16315 Log Cabin, Detroit
Hardie, Frances S., 16250 La Salle Blvd., Detroit
Hardie, Katherine, 2170 E. Jefferson, Detroit
Hardy, Minnie C., 3420 Cass, Detroit
Harris, Zita A., 8710 Radford, Detroit
Harrison, Mrs. Florence, 1016 Ann Arbor St., Flint
†Hartung, Urban, Jr., 2205 Fischer Ave., Detroit
Hazel, F. M., Supt., Lakeview School, 300 Highland Ave., Battle Creek
Healy, Oliver B., 561 Brady, Detroit
Henchey, Leona A., 916 E. Grand Blvd., Detroit
Hermann, Ruth A., 834 Greenwood Ave., St. Joseph
Herrig, Isabella W., 820 Adams St., Saginaw, W. S.
Hilborn, Mrs. Clara M., 2005 Francis Ave., Flint.
Hirschman, Esther, 94 W. Willis, Detroit
Hoag, Grace S., 3329 Wabash St., Detroit
Hodge, Gertrude M., 18080 Santa Barbara, Detroit
Hodges, Duncan C., 6836 Georgia, Detroit
Holland, Mary N., 7630 Harper, Detroit
Holt, Miss Gilberte, 3420 Cass, Detroit
Horgan, Mary, 744 W. Adeline, Detroit
Horn, C. M., Dowagiac Public Schools, Dowagiac
Horton, Mrs. Jeannette, Garfield School, Superior Blvd., Wyandotte
Hosner, Marion, 40 Davenport, Detroit
Howlett, Helen C., 14 Ballard, Ypsilanti
Hubbard, Evelyn B., 3020 Burns, Detroit
Hungerford, Richard, 10040 Yellowstone Detroit
Hupp, Hattie H., 2928 14th, Detroit
Huston, Emma G., 8915 N. Clarendon, Detroit
Itsell, Lillian C., Oak Park School, Lansing
James, Elsie E., 922 Belmont, Flint
Jennings, Elsie J., 848 Pingree, Detroit
Jones, Mrs. Daisy Pryal, 706 Hazelwood, Detroit
Kane, Ruth F., 266 Philip, Detroit
Keeler, L. W., 1135 Granger Ave., Ann Arbor
Kelly, Mary M., 301 W. Third Ave., Flint
Kemp, Maude E., 2111 Mullane, Detroit
Kepperling, Inez, 12038 Wark N. W., Detroit
Kerwin, S. Theel, 19030 Wildemere, Detroit
Kessler, Florence A., 17330 Warrington Dr., Detroit
Ketcham, Alice E., 55 Highland Ave., Highland Park
Kilander, Mrs. Pansy, 14149 Coyle Ave., Detroit
†Knighton, Edward J., 9047 Beverly Court, Detroit
Knuth, Clara, 3385 Norwalk St., Hamtramck
Koopman, G. Robert, Division of Curriculum Research, Dept. of Public Instruction, Lansing
Kraatz, Marion Terry, 1415 Lawrence Ave., Detroit
Krug, Marguerite C., 2270 Leslie Ave., Detroit
Kuhn, Florence E., 5963 Cadillac Ave., Detroit
Kull, Charlotte A., 954 Nottingham Rd., Detroit
†Laing, Earl R., 16265 Westmoreland Rd., Detroit
Lamport, Harold B., Highland Park Public School, Highland Park
Landskov, N. L., Central School, Ironwood
Lang, Miss Marion M., 533 E. Mt. Hope Ave., Lansing
Lannin, Jean, 15721 Ashton Rd., Detroit
Lawrence, Anna, 1212 Fifth St., Bay City
Leavenworth, J. C., 334 W. Hudson, Royal Oak
Le Bost, Mrs. Anna, 6131 Iowa, Detroit
Lennox, Abigail D., 8425 W. McNichols Rd., Detroit
Levis, Luetta, 3250 Chicago, Detroit
Livie, Edna B., 2281 W. Grand Blvd., Detroit
Locker, Marie R., 3319 Pingree, Detroit
Lockwood, Glenn O., Ann Visger School, River Rouge
Lokie, Isabel J., 700 Whitmore Rd., Detroit
Lorenz, Ida, 9511 McQuade, Detroit
Lown, Venna A., 10125 King Richard, Detroit
Lustfield, Alma, 1851 W. Grand Blvd., Detroit
McAdam, Alice H., 2525 Brooklyn, Detroit
McAsey, Nell E., 2920 Palmer E., Detroit
McCallum, Jessie, 840 Waterman, Detroit
McCarthy, Julia M., 18272 San Juan Dr., Detroit
McConnell, Clara E., 670 Pingree Ave., Detroit
McCoy, Margie L., J. B. Ford Elementary School, Hudson St., Wyandotte
McDevitt, Rosabelle, 734 Delaware Ave., Detroit
McDonald, Lucile, 1415 Parker, Detroit
McEwen, Vera D., 4037 Vicksburg, Detroit
McGowan, Margaret C., 2535 Atkinson Ave., Detroit

McGreevy, Genevieve, 1202 25th St., Detroit
McGuinness, Mae E., 17211 Northlawn, Detroit
McKenny, Laurence, 15600 State Fair E., Detroit
McKinney, Rachel, 5130 McKinley Ave., Detroit
McLaughlin, C. W., 9699 E. Maple, Warren
McMahon, Mary, 13185 Pinehurst Ave., Detroit
McMahon, Rachael, 13185 Pinehurst Ave., Detroit
McMillan, Irene, 5161 Charles, Detroit
McSweeney, Mary C., 4240 Buena Vista, Detroit
McVean, Gertrude, 327 Perry St., Pontiac
MacDonald, Margaret, 2545 Virginia Pk., Detroit
Mackay, Mary B., Macomb School 12021 Evanston Ave., Detroit
Magee, Marjorie, 15 E., Kirby, Detroit
Maher, Anna J., 1056 Lenox, Detroit
Maher, Geneva V., 320 E. Grand Blvd., Detroit
Maher, Julia H., 1665 Lawrence Ave., Detroit
Mahoney, Margaret, 1963 W. Grand Blvd., Detroit
Mahony, Mary M., 2963 Arndt St., Detroit
Malone, Kathryn J., 16935 Sorrento, Detroit
Marcereau, Zella H., 17610 Warrington, Detroit
Marlin, Hazel M., 15516 Pinehurst, Detroit
Marsh, Mrs. Lettie, 1012 Cherry St., Grand Rapids
Martin, Thekla, 10415 Lakepointe, Detroit
Mayrend, Earl, 16876 Sorrento, Detroit
Menger, Hilda, High Street School, Lansing
Messner, Clarence J., Richard School, 130 McKinley, Grosse Pointe
Michkan, Ina, 14566 Tuller, Detroit
Minahan, Lucy C., 11543 Linwood, Detroit
Miner, Mae C., 5530 Grayton Rd., Detroit
Mitchell, Mrs. Estella, 13346 Lauder, Detroit
Mitzelfeld, Lucy L., 1214 Rademacher, Detroit
Monroe, Thomas O., 14829 Stansbury, Detroit
Montgomery, Rhoda, 4058 Clements St., Detroit
Morley, Lillian C., 42 E. Willis, Detroit
Morse, John A., 1450 E. Jefferson Ave., Detroit
Morse, Mabel E., 4043 Blaine, Detroit
Morth, Clemence V., 9330 Dexter, Detroit
Moss, Helen A., 919 Lapeer St., Flint
Mumford, Edgar H. E., George W. Ferris School, Highland Park
Munroe, Jessie M., School No. 1, Labodie and High, Ecorse
Murphy, Anna E., 2233 Clements Ave., Detroit
Mygatt, Cynthia J., 4311 Cortland, Detroit
Netzorg, Sadie, 12115 Griggs Ave., Detroit
Newman, Ethlyn, 3400 Wreford, Detroit
Nicholls, Mrs. Mabel, 16824 Parkside, Detroit
Nill, Louise K. B., 483 Keelson Dr., Detroit
Nixon, B. E., Kosciuszko School, Fleming and Burger Sts., Hamtramck
Norton, Mae, 2700 Pingree, Detroit
Obel, Henry, 1000 Alger, Detroit
O'Brien, Edna, 209 N. Linn, Bay City
O'Connor, Margaret, 1992 Morrell, Detroit
O'Dell, Mrs. Iva, Donelson School, Pontiac
O'Hara, Mae, 2800 W. Grand Blvd., Detroit
O'Harrow, Ina, 10 Moss Ave., Highland Park
O'Keefe, Nora, 3250 W. Chicago Blvd., Detroit
O'Leary, Hannah W., 5244 Spokane, Detroit
Oliver, Jean, 2988 Columbus Ave., Detroit
Osborne, Agnes W., 18685 Woodingham Dr., Detroit
Ostrander, Margaret, 100 Parsons, Detroit
†Otto, Henry J., W. K. Kellogg Foundation, Battle Creek
Page, Florence, Mason School, 11870 Ohio, Detroit
Pardon, M. Lynde, 9551 Prairie, Detroit
Parker, Claudia, 2141 Belvidere, Detroit
Parker, Florence, 5474 Trumbull, Detroit
Parker, Helen M., 1255 State Fair E., Detroit
Parker, Howard L., 22926 Nona Ave., Dearborn
Pascoe, May F., Lincoln School, S. Saginaw St., Flint
Patterson, Laura C., 18947 Pennington Dr., Detroit
Pearl, Norton H., 11624 Wisconsin, Detroit
Pearson, Mrs. Carolyn A., 321 E. Newell St., Flint
Peatling, Ella M., 1666 Atkinson Ave., Detroit
Perdue, Mrs. Viola H., Carpenter Street School, Midland
Petry, Harriet, 14565 Hubbell, Detroit
Pettitt, Jay S., 21532 Curtis, Detroit
Pickett, Mrs. Lillian H., 111 W. Baker St., Flint
Pierce, Vernon P., 15376 Hartwell, Detroit
Plumb, Alberta E., 1503 Mott, Saginaw
Popp, Mrs. Cleo E., Hazelton School, Flint
Pringle, May R., 4248 Seebaldt, Detroit
Pullman, Lucile V., 486 W. Palmer, Detroit
Pyle, Margaret I., 11851 E. Outer Dr., Detroit
Quandt, Verna, Stellwagen School, 11450 Outer Dr., Detroit
Quinn, Evelyn, 3917 McClellan, Detroit
Raiss, Edna K., 3916 Montclair, Detroit
Randall, Leo M., 3952 Bewick, Detroit
Rankin, Paul T., Supvg. Dir., Curriculum and Research, 1354 Broadway, Detroit
Raynor, Florence, 3347 Wabash, Detroit
Reardon, Anna T., 306 N. Linn, Bay City
Reaume, Rhoda, 6141 Stanton Ave., Detroit
Redman, Mabel M., 75 Avalon Ave., Detroit
Reynolds, O. D., 14909 Cleophus, Allen Park, Dearborn
Riddle, Caroline M., 655 Hazelwood, Detroit
Rietzkat, Bertha Nell, 3379 Scovel Pl., Detroit
Rietzkat, Marie B., 3379 Scovel Pl., Detroit
Riley, Etta, 4365 Newport, Detroit
Robinson, Henrietta A., Clippert School, 4725 Martin St., Detroit
Robinson, O. J., Copernicus Junior High School, Hamtramck
Robison, Alice E., 103 Hazelwood, Detroit
Roethke, Louise W., 6131 Iowa, Detroit
Rogers, Alex R., 1981 McKinstry, Detroit
Rogers, Esca B., 121 Arbor St., Kalamazoo
Rohrer, Pauline C., 2263 Montclair, Detroit
Rosenthal, Aimee A., 4261 Kensington Rd., Detroit
Ross, Meta, R. F. D. 2, Rochester
Rouse, Jessie H., 2503 S. Washington Ave., Saginaw
Rowe, Julia Gulliford, 6145 12th St., Detroit
Rudduck, Lillian W., 15125 Schoolcraft, Detroit
Russ, Marjorie, 2915 E. Outer Dr., Detroit
Ryan, Lenora M., 429 Eighth St., Escanaba
Sage, M. K., 702 Harding, Detroit

Schoolcraft, Pearl T., 2328 Oakland Dr., Kalamazoo
Schulz, Mary C., 19185 Bretton Dr., Detroit
Schumaker, Frances B., 1350 E. Jefferson, Detroit
Schwesinger, Alda, 3790 Columbus, Detroit
Scollay, Lois A., 2281 W. Grand Blvd., Detroit
Seavitt, Roy W., 4340 W. Jefferson, Ecorse
Seebeck, Elizabeth, 1008 Harrison St., Bay City
Seipp, William C., 14896 Stansbury, Detroit
Shattuck, Alice B., Baldwin School, Pontiac
Sheahan, Stella M., Hamilton School, 4311 Avery Ave., Detroit
Sheldon, Carrie M., 153 E. Church St., Adrian
Shenstone, Anna H., 325 Burr Oak St., Kalamazoo
Sheridan, Margaret E., 1727 Glynn Court, Detroit
Sherman, Ione, 16411 Curtis, Detroit
Shields, Mary, 630 Bellevue, Detroit
Short, Mrs. Mabelle I., Washington School, Flint
Sievewright, Agnes, 3421 Chicago Blvd., Detroit
Simpson, Helen, 17550 Greenlawn, Detroit
Simpson, Mary, 17550 Greenlawn, Detroit
Smith, Anna F., 814 Washington St., Monroe
Smith, Hattie, Longfellow School, Royal Oak
Smith, Julia C., 2028 Adams Blvd., Saginaw
Smith, Margaret M., 7724 14th St., Detroit
Smith, Mrs. Mildred S., 2281 W. Grand Blvd., Detroit
Smith, William A., Route 1, Box 124, Belleville
Spinks, Grace C., 629 Webb, Detroit
Spooner, Janet, Jacoby School, 13210 Main, Detroit
Springman, John H., Pierce School, Birmingham
Staley, Florence, 292 E. Brown St., Birmingham
Starling, Mabel C., 8811 Quincy, Detroit
Stauch, Rose K., Dickinson School, Hamtramck
Staudacher, Ethel, 910 Salzburg Ave., Bay City
Steeds, Ivah, 4237 Larchmont, Detroit
Steele, Frank N., 615 S. West End, Detroit
Steger, Gertrude, 3020 Burns, Detroit
Stemmelen, Owen F., 2234 Junction, Detroit
Stepanik, Mrs. Wanda, 1731½ E. Grand Blvd., Detroit
Stevens, Roy W., 18724 Gainsborough, Detroit
Stevenson, Ethel S., 1214 Military, Detroit
Stolinski, Blanche T., 7508 Wykes, Detroit
Stout, Grover, 1851 W. Grand Blvd., Detroit
Stuart, Betty McBryde, 2202 Calvert, Detroit
Sturm, Mrs. Gladys F., 4261 Kensington Rd., Detroit
Sullivan, Irene F., 7601 Palmetto, Detroit
Sullivan, M. Lilian, 2202 Bewick, Detroit
Sullivan, Mary C., 3217 W. Grand Ave., Detroit
Sweeney, Angela, 13 Oakland Park Blvd., Pleasant Ridge
Sweeney, Anne M., 8411 E. Forest, Detroit
Tardy, Elizabeth, 420 Seven Mile Rd., Detroit
Taylor, Mygleetus, Holbrook School, Hamtramck
†Thomas, John S., 18295 Oak Dr., Detroit
Thompson, Anne A., 2963 Arndt, Detroit
Thompson, Florence, 4546 Vancouver, Detroit
Thompson, Paul, 163 McKinley Rd., Grosse Pointe Farms
Thomson, Marion, 1170 Burlingame, Detroit
Toomey, Katherine E., 17167 Northlawn, Detroit
Trombly, R. C., 899 S. Lakepointe, Detroit
Tucker, Ethel M., 52 Kerby Rd., Grosse Pointe Farms
Tucker, Lillian, 2643 17th St., Detroit
Tuomey, Margaret W., 1459 Lawrence Ave., Detroit
Unruh, Leah B., Parkland School, North St. at Pasadena, Flint
Van Adestine, Gertrude, 6045 Stanton Ave., Detroit
Vandenbergh, Ora H., 28 Collingwood, Detroit
Van Dyk, Henrietta, 3498 Beniteau, Detroit
Van Every, Alice M., Petoskey
Van Gallow, Helen, 8575 Dumbarton Rd., Detroit
Van Horn, Laurence B., Inwood Consolidated Schools, Cooks
Varty, Violet, 13115 E. Jefferson, Detroit
Voorhees, James H., 3801 Pasadena Ave., Detroit
Walcott, E. Forrest, 340 Frazer Ave., River Rouge
Walsh, Margaret M., 1623 Church, Detroit
Wareham, Lucille E., 212 Moran Rd., Grosse Pointe Park
Warner, Frances L., The Wardell, 15 E. Kirby, Detroit
Waterman, Wyla A., 224 E. Court St., Flint
Watkins, Laura A., 19480 Lowell Dr., Detroit
Waugh, Nellie A., 13538 Mendota, Detroit
Weber, Ernest, Training School, Richland
Weidemann, Mathilde, 269 Erskine St., Detroit
Welch, Edith, 3310 Vinewood, Detroit
Welch, Elizabeth, 1616 Ohio Ave., Flint
Wenzel, Brigetta, 5503 Lakepointe, Detroit
West, Thomas F., 6254 Schaefer Rd., Dearborn
Weter, Grace E., 513 S. Troy St., Royal Oak
Whistle, Mrs. Retha Clark, 613 Clifford St., Flint
Wilkinson, Muriel M., 114 Oak St., Wyandotte
Willits, Charlotte A., 6016 Linwood, Detroit
Wilson, Adelaide M., 524 W. Greendale, Detroit
Wilson, Claudia V., 524 W. Greendale Ave., Detroit
Wilson, Grace, 224 E. Court St., Flint
Wingertszahn, Laura, 2610 14th St., Detroit
Winslow, Catherine M., Tilden School, 1314 Kirby W., Detroit
Woody, Clifford, School of Education, University of Mich., Ann Arbor
Woolfenden, Elizabeth, Leland School, 1395 Madison Ave., Detroit
Woolfenden, Grace F., Oakman School, 12920 Wadsworth, Detroit
Wuennecke, Laura, 623 LaFayette, Grand Haven

Wyatt, Ifie, 2170 Jefferson, E., Detroit
Wynne, Julia, Ruthruff School, 6311 W. Chicago, Detroit
Yager, Gretchen J., Woodruff Elementary School, Wyandotte
Yokom, Merle C., 61 Clairmount, Detroit
Young, Amelia D., 7364 Churchill Ave., Detroit
Young, Dorah, Oak Grove Club, Flint
Yuergens, Delia, 7479 Stockton, Detroit

MINNESOTA

Bauer, Harold C., Lakefield
†Becker, Elsa, 1732 E. Fourth St., Duluth
Benson, Gudrun, 1900 Park Ave., Minneapolis
Boysen, Mrs. Agness, Lyndale School, Minneapolis
Butler, Margaret F., Webster School, St. Albans and Holly Ave., St. Paul
Cross, C. Willard, Supt. of Schools, Faribault
Dosdall, Bertha A., 1332 Dayton Ave., St. Paul
Drohan, Gertrude, 2716 Portland Ave., Minneapolis
Dutton, Mrs. Jean U., 1222 W. 31st St., Minneapolis
Frederickson, Mrs. Claire L., Howe School, 43rd Ave., S., and E. 38th St., Minneapolis
Gundlach, Lucy, 1726 Lincoln Ave., St. Paul
Hamilton, Katherine, 615 City Hall, St. Paul
†Hanson, Lillian C., Bryant and Monroe Schools, Duluth
Harger, Lena L., 4235 Grimes Ave., S., Minneapolis
Hawkinson, Mabel J., Pine City
Heinrichs, Evelyn K., 3152 37th Ave., S., Minneapolis
Herrly, Dora J., Box 964, Grand Rapids
Holtz, Jennie F., Irving School, 17th Ave., S. and 28th, Minneapolis
Johnson, Jennie U., 393 Bates Ave., St. Paul
Keck, Malcolm B., Prescott School, Lowrie Ave. and Taylor St., Minneapolis
Keckefoth, Ethel H., Washington School, Eighth Ave. and Sixth St., S., Minneapolis
Kirk, A. W., Jackson School, Edmund and Arundel Sts., St. Paul
**Knox, Bess June, 516 University Ave., S. E., Minneapolis
Knudtson, O. E., Supt. of Schools, Pipestone
Lichtenberger, James F., Windom School, Minneapolis
McAlister, Gladys M., 905 W. 44th St., Minneapolis
McNaughton, Edith L., Lindsay School, 310 Pleasant, St. Paul
Mallory, Blanche, 715 E. First St., Duluth
Mather, Helen, 2011 Third Ave., S., Minneapolis
Murray, Albert Sherman, 1242 W. Minnehaha St., St. Paul
Murray, L. C., Supt. of Schools, Aitkin
Nyhus, Ellen, Curtis Hotel, Minneapolis
Pahr, Mrs. Ida C., 3118 E. 22nd St., Minneapolis
Peters, Leone E., 2809 Park Ave., Minneapolis
Petersen, Mrs. Edith Barney, Motley School, Dartmouth Ave. and Erie St., S. E., Minneapolis
Peterson, Hulda V., 622 E. Summit Ave., Fergus Falls
Porcher, Maria R., 3549 Dupont Ave., S., Minneapolis
Probst, Ella M., Calhoun School, Minneapolis
Ralph, Mrs. Jessie Fawcett, 4405 Aldrich Ave., S., Minneapolis
Ringdahl, N. Robert, 3220 Tenth Ave., S., Minneapolis
†Rossman, Mabel A., Washburn School, Duluth
Ruddy, Harriet E., Phalen Park School, 650 E. Rose St., St. Paul
Sand, Anna, 103 W. 36th St., Minneapolis
†Shove, Helen B., 3116 Clinton Ave., S., Minneapolis
Stanley, Elizabeth A., 749 N. E. Madison St., Minneapolis
Staudemaier, W. W., Tuttle School, Talmadge and 18th Ave., S. E., Minneapolis
Steffensrud, E. R., Washington and Lincoln Schools, Chisholm
Strate, Nettie M., 3032 Colfax Ave., S., Minneapolis
Taylor, Edith B., 1430 W. Minnehaha St., St. Paul
Tucker, Ermina, 305 City Hall, Minneapolis
Wallar, Beulah H., Greeley School, 26th St. and 12th Ave., S., Minneapolis
Walton, Matilda K., Horace Mann School, Chicago Ave. and 34th St., Minneapolis
Weld, Paul A., Cobb-Cook School, Hibbing
White, Zada A., 107 W. 52nd St., Minneapolis
Wilder, Mrs. Leone, Cooper School, 44th Ave., S. and 33rd St., Minneapolis
Wilkinson, Sarah H., Whitney School, 19th Ave., N. E. and Pierce St., Minneapolis

MISSISSIPPI

Archer, Ellie, Witherspoon School, Meridian
Baker, Quintard, Battle Hill, Jackson
Bishop, G. J., 3324 W. Beach, Gulfport
Bourdeaux, Annie, 2126 23rd Ave., Meridian
Brown, Virginia, South Side School, Meridian
Burney, Georgia L., Van Cleave
Carter, Mrs. Laurie Mae, Oakland Heights School, Meridian
Charissia, Sister M., St. Mary of The Pines, Chatawa
†Clement, Bess Rogers, Eliza Clark School, Clarksdale
Dempster, Alice, 1607 24th Ave., Meridian
Dickins, Hattie, Box 172, Leland
**Doolittle, Laurie, 44 Victoria Ave., Cleveland
Duling, Lorena, 718 N. Congress St., Jackson
Gaston, Evelyn, Tuxedo School, Meridian
Gillespie, R. H., 905 University Ave., Oxford
Horn, Lizzie, 404 College St., Grenada
Houston, Miss Gabriel, 111 W. Second St., Clarksdale
Key, Mary Belle, 321 Dunbar St., Jackson
Lester, Laura R., Woodlawn Pl., R. F. D. 5, Jackson
McGee, D. A., Pocahontas
Majure, Ursula, Highland School, Meridian
Milner, Bessie, 720 E. Beach, Gulfport
Mounger, Lurline, Box 117, Clarksdale
O'Bannon, Mrs. Fred, Sterling School, Greenville
Ray, Clara N., 909 Franklin St., Corinth
Ritch, Alma, 211 Lameuse St., Biloxi
Smith, Irene, Chalk School, Meridian
Stewart, E. B., The Consolidated School, State Line
Stokes, Mary M., Box 344, Columbus
Thornton, Mattie, Marion Park School, Meridian
Varnado, Effie, 612 Washington St., Greenwood
Varrado, Luella B., 313 North St., Jackson

MISSOURI

Andrews, F. E., 900 E. Argonne, Kirkwood
Annin, Mrs. Anna W., 3815 McCausland Ave., St. Louis
Arnold, Leah, Sandusky School, Liberty
Baker, Beulah N., Kennard School, 5031 Potomac St., St. Louis
Baker, Linnie C., 309 Pine St., Liberty
Baker, Olive, Arlington School, 1617 Burd Ave., St. Louis
Barley, Ida L., 3700 Washington St., Kansas City
Barnes, Mrs. Abbie C., 513 N. Noyes Blvd., St. Joseph
Barnes, Ward E., Normandy Consolidated School Dist., 6701 Easton Ave., St. Louis
Bays, John A., Pestalozzi School, 1428 S. Seventh Blvd., St. Louis
Bender, Ethel D., 5 Hillcrest Pl., Kirkwood
Benson, J. R., 6131 Magnolia Ave., St. Louis
Beumer, Edward H., 646 N. Kirkwood Rd., Kirkwood
Bick, Anna, Lowell School, 1409 Linton Ave., St. Louis
Blackburn, Lulu, 414 Wallace, Kansas City
Boyd, Anna B., 5330 Pershing Ave., St. Louis
Boyd, Sarah L., 5330 Pershing Ave., St. Louis
Bracken, John L., Supt. of Schools, Clayton
Brand, Mrs. Bessie, 1229 Amherst Pl., St. Louis
Brooks, Fred E., 7313 Melrose Ave., University City
Brossard, Julia E., 240 W. Argonne Dr., Kirkwood
Brown, Charles H., Wheatley School, 4239 Papin, St. Louis
Buchanan, William D., 5511 Vernon Ave., St. Louis
Burke, Mary J., 5321 Harrison St., Kansas City
Capp, Theresa I., 2531 Faraon St., St. Joseph
Chiles, E. E., Harrison School Patron's Assn., 4163 Green Lea Ave., St. Louis
Connery, Julia M., Central Institute for the Deaf, St. Louis
Cozean, Grover M., 5118 Vernon Ave., St. Louis
Cramer, Roscoe V., 3819 E. 62nd St., Kansas City
Crawford, Miss Cecil, 709 N. 24th St., St. Joseph
Creek, E. G., 813 N. 24th St., St. Joseph
Cullen, Blanche, 5370 Pershing Ave., St. Louis
Curry, A. R., Hale H. Cook School, 7302 Pennsylvania, Kansas City
Cusack, Alice M., 210 Library Bldg., Ninth and Locust Sts., Kansas City
De Board, S. Lee, 2420 Woodson Rd., Overland
Deffendall, P. H., 8034 Madison St., St. Louis County
†Denham, Charles T., 810 S. Liberty, Independence
Denham, Nicholas F., Blue Summit School, 23rd and Scott, Independence
Detwiler, O. L., Central Elementary and Junior High School, 906 Center St., Hannibal
Dickey, H. B., Fremont School, 2840 Wisconsin Ave., St. Louis
Dickson, Mamie A., 3045 Lambdin Ave., St. Louis
Ditmars, Thomas, 3802 E. 36th St., Kansas City
Dolan, Elizabeth, 500 Huntington Rd., Kansas City
Downs, Harold T., Lockwood School, Webster Groves
Drayer, H. C., 6933 Columbia Ave., University City
Drury, M. F., Jackson Park School, University City
Edmiston, H. H., 6146 Westminster Pl., St. Louis
Egan, Mrs. Anna H., 4111 Warwick Blvd., Kansas City
*Elliott, Mrs. Elsie M., 970 Prospect Ave., Springfield
Ewers, A. F., 3411 Pestalozzi St., St. Louis
Falke, Clara, 806 E. 41st St., Kansas City
Farrar, George W., Marion School, Marion and Midland Ave., Overland
Fleming, C. I., 6605 Neosho St., St. Louis
Foley, Elizabeth, 101 E. 51st St., Kansas City
Foristel, Margaret S., 4900 S. Broadway, St. Louis
Foster, W. H., Caruthersville Grade School, Caruthersville
Gaeser, Lillian, Central School, Creve Coeur
Gaines, I. A., 604 Bonita Ave., Webster Groves
Garman, Catherine, 1016 E. Broadway, Sedalia
Gartenbach, Margaret, 3196 Morgan Ford, St. Louis
Gentry, Thomas F., 421 Edgewood Dr., Clayton
Gidinghagen, Walter, 6115 Swope Pkwy., Kansas City
†Gilliam, M. J., 4369 W. Belle Pl., St. Louis
Girault, Leonide M., Woodward School, 725 Bellerive Blvd., St. Louis
Godbey, Walter A., 3825 Utah Pl., St. Louis
Gooch, Emory L., 2303 Big Bend Blvd., Maplewood
Goode, Lenna, Frances Willard School, 5010 Garfield, Kansas City
Gorman, Frank H., University Elementary School, Columbia
Goslin, W. E., High School Building, Webster Groves
Grace, John F., 1845 S. Spring Ave., St. Louis
Green, G. H., 6189 Kingsbury Blvd., St. Louis
Green, Howard E., Herzog School, 5830 Mimika Ave., St. Louis
Griffin, Margery M., Clay School, 3820 N. 14th St., St. Louis
Hailey, J. R., Avery School, Bompart and Marshall, Webster Groves
Hamilton, Mrs. Alva R., 7245 Ward Pkwy., Kansas City
Hamilton, Edward D., 1118 Aubert Ave., St. Louis
Hamilton, Mrs. Sarah T., Central School, Ferguson
Hanson, George W., Goodall School, Chestnut and Percival, Webster Groves
Henderson, Perry B., The Glenridge School, 848 Glenridge, Clayton
Hendrick, Louise, 2332 Spencer Ave., Overland
Hickey, P. J., Board of Education, 911 Locust St., St. Louis
Hill, Stanley, 4038 Palm St., St. Louis
Hoffman, Dora E., 5446 Harrison, Kansas City
Holliday, Frances, 409 W. Fifth, Maryville
**Hood, E. A., 6031 Southwest Ave., St. Louis
Hooker, Minnie L., 1007 Linwood, Kansas City
Hooss, Ida M., Meramec School, 2745 Meramec St., St. Louis

House, Ralph W., 411 Argonne, Jefferson City
Howard, J. E., 600 De Mun, St. Louis
Humphrey, Nelly, Esther
Ilgen, V. Carl, Pershing School, 6761 Bartmar St., University City
Jackson, Euris J., Cote Brilliante School, 2616 Cora Ave., St. Louis
Johnson, W. H., 6839 E. 15th St., Kansas City
Jones, Clara F., Samuel Cupples School, 4908 Cote Brilliante Ave., St. Louis
Kegelman, Lillian, Iveland School, Dyer and Lackland, Overland
Kenefick, Jennie G., 5469 Maple Ave., St. Louis
Kerns, Nancy M., 4246 Agnes St., Kansas City
Lamkin, Uel W., Pres., The Northwest Missouri State Teachers College, Maryville
Langston, John M., 2354 Michigan Ave., St. Louis
Large, Grace M., 6236 Waterman Ave., St. Louis
Lewis, Nellie K., 5252 Walsh, St. Louis
Lomax, Gladys, Humboldt School, Second and Cherry, St. Joseph
*†Longshore, W. T., Greenwood School, 3711 E. 27th St., Kansas City
Lovelace, Abigail, 4026 S. Benton, Kansas City
Lyon, Percy A., Scullin School, 4160 N. Kingshighway, St. Louis
McCafferty, Estella H., Hamilton School, 1514 Campbell St., Kansas City
McCallister, Mabel, 3238 Marshall Ave., St. Louis
McCarthy, Nellie, Taussig Open Air School, 1540 S. Grand Blvd., St. Louis
McCaslin, E. E., 5027 Washington Ave., St. Louis
McKinney, Marjorie, Cairo
McNabb, H. H., Marshfield
Mack, Inez L., E. C. White School, 11 Brookside Blvd., Kansas City
MacKay, James L., 573 S. Clay Ave., Kirkwood
Marston, C. E., 7012 The Paseo, Kansas City
Martin, Arthur E., 3850 E. 60th Ter., Kansas City
Martin, William H., 4116 Warwick Blvd., Kansas City
Mecker, H. H., 4946 Devonshire, St. Louis
Melcher, George, Supt. of Schools, 201 Library Bldg., Kansas City
Milan, Fred S., 6352 Washington Ter., St. Louis
Milster, Ben C., 5428 Holly Hills Ave., St. Louis
Moore, Mary, 2809 Sacramento St., St. Joseph
Morrison, A. F., 7637 Carswold Dr., St. Louis
Mumm, Emma O., 1027 Felix St., St. Joseph
Murphy, Nora G., Desloge
Nelson, Minnie, 1315 N. Tenth St., St. Joseph
Neville, Lucy B., Girls Parental Home, Independence
Nicholson, Nell Grant, 6410 San Bonita Ave., St. Louis
Nowlin, Egbert W., Bristol School, Webster Groves
O'Connell, May, J. C. Nichols School, 69th and Oak, Kansas City
Oliver, Stanley C., State Teachers College, Springfield
Osborne, John F., Thacher School, 5008 Independence Ave., Kansas City
Patterson, M. J., 319 Westover Rd., Kansas City
Perkins, Bessie, 622 E. Tenth St., Sedalia
Peterman, May B., 1403 Edmond St., St. Joseph
Peters, Alvina, Charless School, 2226 Shenandoah St., St. Louis
Purdom, J. Leslie, Adams School, 1311 Tower Grove Ave., St. Louis
†Purnell, John H., Marshall School, 4342 Aldine St., St. Louis
Puyear, Hugh C., 735 W. Fifth St., Washington
Quirk, Margaret, Washington School, St. Joseph
Reason, Arthur W., L'Onverture School, 2612 Papin, St. Louis
Rennison, A. M., South Park School, 17th and Belle, St. Joseph
Reynolds, Leolia, 1109 Fulton Ave., Hannibal
Rhetta, H., 4541 Garfield Ave., St. Louis
Riedel, Marcel T., New Overland School, Woodson and Palmer Ave., Overland
Ritchie, Frances O., 1201 N. Second St., St. Joseph
Robeson, James A., 4147 Montgall Ave., Kansas City
Rucker, Thomas J., 5564 Maple Ave., St. Louis
Sanders, James A., Elementary School, Leadwood
Schlueter, W. H., Oak Hill School, 4300 Morganford Rd., St. Louis
Schrader, Alma, 215 N. Middle St., Cape Girardeau
Scott, James Armstrong, Banneker School, 2840 Lucas, St. Louis
Seitz, R. E., Normandy Consolidated School Dist., 6701 Easton Ave., St. Louis
Sellman, William N., Wyman School, 1547 S. Theresa Ave., St. Louis
Sexton, L. J., Baden School, 8724 Halls Ferry Rd., St. Louis
Shewman, W. D., 853 Atlanta Ave., Webster Groves
Shores, Roscoe V., Asst. Supt. of Schools, Public Library Bldg., Kansas City
Smith, Joe, Normandy Consolidated School Dist., 6701 Easton Ave., St. Louis
Smith, Margaret J., Arnold School, Lexington
Smoot, Lucy, 4011 Baltimore Ave., Kansas City
Smoot, Viola, 2118 Byers Ave., Joplin
Stephens, C. E., 5550 Page Ave., St. Louis
Stephens, E. E., Normandy Consolidated School Dist., 6701 Easton Ave., St. Louis
Steuber, F. J., Rose Fanning School, 3417 Grace Ave., St. Louis
Strachan, Lexie, Public Library Bldg., Ninth and Locust Sts., Kansas City
Strickler, R. E., 2748 Henrietta St., St. Louis
Thomas, Miles C., Border Star School, 6321 Wornall Rd., Kansas City
Thompson, Mary A., 1111 McCausland Ave., St. Louis
Thompson, Stella, 1459-A Laurel St., St. Louis
Trice, Daisy Mae, 1921 E. 24th St., Kansas City
Trumbo, Mabel, 4046 Warwick, Kansas City
†Tucker, Isabel, Festus Wade School, 2030 S. Vanderventer, St. Louis
Usher, James L., 3401 Wyoming St., St. Louis
Vining, Fannie L., 3675 Jefferson Ave., Kansas City
Wahlert, Jennie, 2918 Harper, St. Louis
Watrous, Mary L., 2640 Euclid Ave., Kansas City
Wells, Mrs. Annie L., 1 Summit Pl., St. Joseph

Wells, Jessie O., 4233 Enright Ave., St. Louis
White, Mabel A., Sherwood School, 29th and Edmond, St. Joseph
Whitney, Lucy G., Martin School, 416 Garland, Kansas City
Williamson, Ruby M., R. R. 5, Box 207, Independence
Wilson, Albert M., 3630-A Shaw Blvd., St. Louis
Witter, Charles E., 5182 Maple Ave., St. Louis
Wohlschlaeger, Tom, Rock Springs School, 3974 Sarpy, St. Louis
Wolfe, Inez M., 3415 Euclid Ave., Kansas City
Young, Myrtle M., 3012 Bellefontaine, Kansas City
Zimmerschied, Ada, Gladstone School, 335 N. Elwood, Kansas City

MONTANA

**Anderson, Katherine, Stukey Apts., Great Falls
Berges, G. A., 102 S. Jordan, Miles City
Boehme, Ione M., Box 403, Great Falls
Chamison, Goldie, Tripp and Dragstedt Apts., Butte
Edgerton, Helen, 908 Third Ave., N., Great Falls
Fairbanks, E. L., 38 N. Atlantic, Dillan
Flores, Mrs. Zella K., Box 412, Lewiston
Holgren, Mabel Grant, 403 Eddy Ave., Missoula
Lausted, Alice, 205 N. 26th St., Billings
Lausted, Hulda, 205 N. 26th St., Billings
Lewis, H. P., Supt. of Schools, Conrad
Lyman, Mrs. Emily D., Box 454, Hamilton
Miller, Ruby A., Supt. of Schools, Choteau
Moser, Dexter H., 504 N. Wallace Ave., Bozeman
Munson, Alma N., Box 53, Bozeman
Neal, Russell LeRoy, Randall Apt., Missoula
Robertson, Garry E., 705 W. Evelyn St., Lewistown
Rulien, Esther M., Box 28, Bozeman
Schaefer, M. Louise, 120½ Tenth St., N., Great Falls
Stegner, W. E., Supt. of Schools, Plentywood
Stevenson, Mrs. May E., 2720 First Ave., N., Great Falls
Thompson, Grace M., McKinley School, 1617 Sixth Ave., N., Great Falls

NEBRASKA

Austin, Mary N., 43 Drake Court, Omaha
Baird, Sadie, 1219 S. 26th, Lincoln
Baker, Nina, Sheridan School, 30th and Wendover, Lincoln
Beal, Mamie G., 2514 B St., Omaha
Beattie, Merle M., Board of Educ. Office, Lincoln
Bedell, Bess C., 630 Park Ave., Omaha
Blackmore, Ida, 5022 Izard St., Omaha
Bottorf, Blanche, 212 E. 11th St., Grand Island
Bracken, Angeline, Monmouth Park School, Omaha
Bratton, Mrs. Anna M., 3200 Center St., Omaha
Brissenden, Inez M., 721 W. Second St., Grand Island
Brooker, Florence, 4529 S. 19th St., Omaha
Burnham, Archer L., Supt. of Schools, Scottsbluff
Chapman, Johannah, 5427 LaFayette Ave., Omaha
Clark, Mrs. Mae T., 703 W. 15th St., Grand Island
Compton, Maude, Highland School, 27th and Adams Sts., Omaha
Craig, Nell, 3115 Creighton Ave., Omaha
Demel, R. B., 1811 13th Ave., Central City
Dixon, Minnie E., Woodbine Apts., Aurora
Eldridge, Ethel G.,* 2221 S. 32nd Ave., Omaha
**Ellett, Virginia, 4814 Webster St., Omaha
Fay, Gaynelle, Monroe School, Omaha
Ferguson, Grace L., 910 W. Second St., Grand Island
Forsyth, Fannie, Blackstone Hotel, Omaha
Foster, Mary E., West Side School, 32nd and U Sts., Omaha
Galleher, Lillian G., 1908 First Ave., Scottsbluff
Gepson, E. D., 4240 Grant St., Omaha
Grant, Josephine, Rome Hotel, Omaha
Griest, Mary Ruth, Train School, Sixth and Hickory Sts., Omaha
Griffith, Grace, 5810 Rees St., Omaha
Healey, Anna T., Venetian Court, Omaha
Holmes, Stella, Bancroft School, Riverview Blvd., Omaha
Hutton, Mrs. Martha, 3212 Vine St., Lincoln
Isakson, Edith, 5022 Davenport St., Omaha
Langenheder, Matilda, 105 N. Sycamore St., Grand Island
Longsdorf, Helen M., 630 Park Ave., Omaha
Lynn, Ethel A., 3111 Davenport St., Omaha
McGee, R. R., Kramer High School, Columbus
McNamara, Mary, 2420 N. 45th Ave., Omaha
Mathews, Mrs. Lulu B., 602 N. 47th St., Omaha
Matthews, Marie, 1515 Park Ave., Omaha
Miller, Glenn E., 1306 N. Washington, Lexington
Mills, Mrs. Clara S., 5105 Underwood Ave., Omaha
Morley, Mrs. May, Prescott School, Lincoln
Myers, Fannie, Mason School, 24th and Mason Sts., Omaha
Newell, Ethel K., 2555 Ellison Ave., Omaha
Newlean, Jeannette, 914 S. 36th St., Omaha
Partridge, H. R., Supt. of Schools, Alliance
Pearson, Emelia, Minne Lusa School, 28th Ave. and Ida St., Omaha
Petersen, Bertha, 144 S. 38th Ave., Omaha
Peterson, Mrs. Alice C., 820 S. 58th St., Omaha
Pickard, Anna B., 5148 Franklin St., Omaha
Pollock, Ruth, Colonial Hotel, Omaha
Pritchard, Lula, 6334 N. 30th St., Omaha
Pyrtle, E. Ruth, Bancroft School, Lincoln
Rasmussen, Maren, 630 Park Ave., Omaha
Reap, Edna M., 5119 Hamilton St., Omaha
Reed, Mabel L., 4229 Douglas St., Omaha
Rousseau, Maude, 1245 S. 26th, Lincoln
Roys, Cassie F., 2609 Bristol St., Omaha
Shepard, Catherine, Dir. of Teacher Training, Union College, Lincoln
Skinkle, James, Chadron
Slocum, June M., 4512 S. 22nd St., Omaha
Smith, Mrs. Elsie M., 5612 Florence Blvd., Omaha
Thompson, P. T., 4519 N. 36th Ave., Omaha
Tope, Donald, 4724 Davenport St., Omaha

Velte, C. H., Supt. of Schools, Crete
Waterman, Mrs. Edna H., 5109 Underwood Ave., Omaha
Weldon, Dossie D., 1703 W. Keonig St., Grand Island
Wetzel, Marie C., 192 Drake Court, Omaha
Whitehouse, Pattie, 150 Drake Court, Omaha
Wilson, Clara O., Teachers College, University of Nebraska, Lincoln

NEVADA

Knudson, K. O., 216 N. Sixth St., Las Vegas

NEW HAMPSHIRE

Clark, Guy H., Durham Junior High School, Durham
DeGross, Mary E., 249 Islington St., Portsmouth
Goodwin, Alice D., 16 Abbott St., East Rochester
Hicken, Blanche E., 81 Pennacook St., Manchester
Janvrin, Charles F., South Junior High School, Seabrook
Keir, Jean, 12 Front St., Rochester
Lewis, Della I., 145 Clinton St., Concord
Mulvanity, Mary T., Quincy Street School, Nashua

NEW JERSEY

Achenbach, Anne, 61 Hawthorne Ave., East Orange
†Adams, Mrs. A. Virginia, E. Landis Ave., Vineland
Atkinson, Bertha I., Summit Avenue School, Pitman
Atkinson, Viola E., Mt. Holly Rd., Burlington
Axtell, Paul H., Board of Education, Leonardo
Ayres, Malcolm B., 319 E. Dudley Ave., Westfield
Bannerman, Helen, Public School No. 15, Dwight St., Jersey City
Barnes, Thomas L., 39 New St., East Orange
•Beck, Ferdinand L., School No. 3, S. Grier Ave., Linden
•Bigelow, Merrill A., 115 Spruce St., Bloomfield
Boney, C. Dewitt, Nassau School, 330 Central Ave., East Orange
Bosshart, John H., Supt. of Schools, South Orange
Bourlier, Mrs. Helen T., 93 Johnson Ave., Hackensack
Boyer, B. J., 621 E. Union Ave., Bound Brook
†Brady, William, Washington School, 175 Sanford St., East Orange
Bragg, Mrs. Martha H., Clifton Avenue Grade School, Lakewood
Brandenburg, Edna A., Brayton School, Summit
†Brearley, Mrs. Helen C., 57 Princeton Ave., Princeton
Breisch, Lulu I., 121 E. Union Ave., Bound Brook
Brinkerhoff, George I., Webster Street School, Newark
Brown, Gladys D., Lincoln School, Dunellen
•Bryan, H. Eloise, Cinnaminson Township Schools, Riverton
Bryson, Jennie V., 610 N. Fifth St., Camden
Buchanan, Margaret, 53 S. Windsor Ave., Atlantic City
Budd, Francis H., 36 Chapman Pl., Glen Ridge
Buffington, E. A., 86 Linden Ave., Bloomfield
Bush, Fred S., 145 Washington St., Bloomfield
Bustard, Joseph L., Chestnut Street School, Roselle
Cadoo, Sarah Elizabeth, 5 Parmley Pl., Summit
Cassel, Lloyd S., Supt. of Schools, Freehold
Cassidy, Mabel M., 341 Union St., Jersey City
Christie, James H., M. J. Donohoe School, Dodge St., Bayonne
Cline, Anne V. A., 115 Francisco Ave., Rutherford
Cole, Alice K., LaFayette School No. 6, Elizabeth
Cowie, George H., Jr., Hurden-Looker School, Hillside
Cowperthwait, Elizabeth R., 22 Branch St., Medford
Crane, J. Ernest, Summer Avenue School, Newark
Cressman, Alice M., 128 Chestnut St., Rutherford
David, Vivian O., LaFayette School, Bound Brook
Davie, Ethel M., Grammar Grades, School Administration Bldg., Atlantic City
Dengler, C. F., 514 Rahway Ave., Woodbridge
Dennis, Emma T., 30 Marion St., Trenton
Dietz, Charles E., School No. 3, Main near Slater St., Paterson
Dix, William L., Jefferson School, Trenton
Dolan, John J., Longfellow School, Oakdene Ave., Teaneck
Dorsey, Belle E., School No. 1, State St., Perth Amboy
Dowling, Mrs. M., Columbus School, Carteret
Dowling, Verna, 114 S. Broad, Penns Grove
Dransfield, J. Edgar, 78 Shaler Ave., Cliffside
Duplak, Nellie P., Jefferson School, Lyndhurst
Egan, Mary B., 719 Morgan Ave., Palmyra
Emmet, Martha M., Lincoln School, Englewood
Fenimore, Mary A., 215 N. Fourth St., Camden
Fennimore, Roland, 844 River Rd., Fair Haven
Fiedler, William G., 921 Cottage Pl., Union City
Finger, Mary H., Gregory School, Rutherford Ave., Trenton
†Flower, Frank R., Albany Apts., Atlantic City
Floyd, James R., 1231 Thornton Ave., Plainfield
Francis, George B., 916 Bay Ave., Point Pleasant Beach
Freeland, Grace A., 119 Summit Ave., Summit
Galloway, Carl H., Franklin School, Metuchen
Gerlack, Luella, 110 N. Second St., Millville
Gerow, Aline, Public School No. 10, Paterson St. and Pierce Ave., Jersey City
Glennie, Alexander J., Miller Street School, Newark
Green, Lilian M., John Marshall School, Magnolia Ave., Elizabeth
Gremont, Helen C., 370 South Ave., Bridgeton
†Gronde, Franklin J., 218 Fourth Ave., Bradley Beach

Haines, Jennie F., 59 Elmwood Ave., Union
Hambright, John B., Maple Avenue School, Newark
Hamilton, Ella J., Supvr., Kindergarten and Primary Grades, School Administration Bldg., Atlantic City
Hammell, Ethel C., Junior High School, Atlantic City
Hammond, D. Stanton, 309 E. 42nd St., Paterson
Harding, Ernest A., Dept. of Public Instruction, Trenton
Hargrove, William B., Charlton Street School, Newark
Hartman, A. L., 104 Haddon Pl., Upper Montclair
Harvey, Mrs. Loretta, Woodrow Wilson School No. 19, Edgar Rd., Elizabeth
Hay, George A. F., Ridgewood High School, Ridgewood
Hegel, Lizzie C., 66 S. Tenth St., Newark
Heller, Lillian, South Eighth Street School, Newark
Hermann, Barbara V., 137 Roosevelt Ave., Carteret
Hermann, Catherine B., 137 Roosevelt Ave., Carteret
Herron, John S., Robert Treat Junior High School, Newark
Hibbs, M. Gregg, Jr., 617 Beechwood Ave., West Allenhurst
Hice, Mae, 431 E. Second St., Plainfield
Higgins, E. May, 589 Mountain Ave., Bound Brook
Hinman, S. T., Columbus School, Myrtle and Grandview Aves., Westfield
Hobrough, Mrs. W. W., 142 Broad St., Matawan
Horton, Ingeborg M., 426 Lippincott Ave., Riverton
Howard, L. Frances, Box 37, Springfield
Howard, Margarette E., 119 Summit Ave., Summit
*Hulse, Henry S., Jr., 650 Parker St., Newark
Hummer, H. Myrtle, 28 Wall St., Trenton
Jacob, Walter, Jr., Emerson School, Plainfield
Jenkins, Albion U., 357 E. 37th St., Paterson
Johnson, Alberta M., 8 N. Providence Ave., Atlantic City
Johnson, Sara G., Rand School, Montclair
Johnston, Ruth S., George Washington School, Ridgewood
Jupp, Estelle S., Washington School, Rutherford
Keller, Ethel M., 711 Glen Ave., Westfield
Kelly, M. Agnes, 269 Chestnut St., Nutley
Kelly, Ruth Bryan, Kelly Ave., West Creek
Kincaid, Stella M., 88 Essex Ave., Glen Ridge
Klein, Mrs. Anna L., Public School No. 1, Guttenberg
Knowles, Mrs. Margaret A., Madison-Monroe School, North Ave., Elizabeth
Koerner, Grace E., Seth Boyden and Maplewood School Districts, Maplewood
†Kurtz, Louise, 126 Kingsland Rd., Nutley
La Vance, Laura F., 147 Hadley Ave., Clifton
Leahey, P. Joseph, Rushmore Ave., R. F. D. 2, Plainfield
Lee, Eleanor R., 554 Bellevue Ave., Trenton
Lee, Ethel M., 673 Fairview St., Camden
Lehlbach, Emma, 394 S. Belmont Ave., Newark
Lesh, William S., 20 Stephen St., South River
Levy, Harold, 875 Ave. C., Bayonne
Lilley, Edna J., 1215 Eldridge Ave., West Collingswood
Lindbloom, Ray L., Kenilworth School, Ridgewood
Logan, Mary G., Box 106, Kingston
Long, John L., School No. 4, Columbia Ave., Cliffside Park
*†McConnell, Ralph C., Texas Avenue School, Atlantic City
McLean, William, Mt. Hebron Junior High School, Upper Montclair
McQuade, Francis A., Jefferson School No. 7, North Bergen
*Mackay, Jean F., 722 Montrose St., Vineland
Male, Keene B., No. 7 School, Myrtle Ave., Passaic
Meade, Mary P., 108 Smith St., Perth Amboy
Michael, Raymond, Junior High School No. 3, W. State St., Trenton
Miller, Mrs. Eva P., Spring Garden School, Nutley
Miller, Paul S., Stockton School, East Orange
Milligan, John P., Watsessing School, Bloomfield
Miner, Benjamin C., Central Avenue School, Newark
Mombert, Eleanor, 313 15th Ave., Paterson
Moore, Anita, Ridge Avenue School, Neptune
Morrison, Howard D., Court House Annex, Trenton
Mosby, Rosa M., 231 Washington St., Mt. Holly
Moulton, O. J., Neptune High School, Ocean Grove
Mulford, Mrs. Clara T., Vine Street School, Bridgeton
Munson, Ruth W. First Street School, South Orange
Meyers, Robert S., 17 Roosevelt Ave., East Orange
Neulen, Lester N., 360 Warwick Ave., West Englewood
Nickum, C. Edith, 311 Montgomery St., Highland Park
Oakes, Grace S., 337 Bellevue Ave., Hammonton
Owen, Katharine E., Robert Morris School, Cross Ave., Elizabeth
*Patz, Gustav, 2033 Balmoral Ave., Union
Paulmenn, Helen G., 54 Sayre St., Elizabeth
Peffer, Ernest M., Maxson School, Plainfield
Peters, Mrs. Mary V., 22 S. Baltimore Ave., Ventnor City
Petersen, Anna J., 10 Suydam St., New Brunswick
Petty, Letitia, Washington School, Lyndhurst
Pierson, Margaret, 20 Reeger Ave., Trenton
Pollard, Louise E., 1399 North Ave., Elizabeth
†Potter, Floyd A., Massachusetts Avenue School, Atlantic City
Powell, Mrs. Lou B., Roseland School, Roseland
†Predmore, R. L., 79 Hornsby Ave., Fords
Pringle, Adeline H., 175 Harrison Ave., Jersey City
Pyle, Olga M., 4426 Cove Rd., Merchantville
Quig, Emily Hart, 5 Parmley Pl., Summit
Quinn, Guy L, 2106 Bangs Ave., Neptune
Reimer, George R., 954 Caldwell Pl., Union

Reynolds, Emily C., Kuser School, 181 Nottingham Way, Trenton
Rice, Thomas W., Laning Avenue School, Verona
Ricketts, Ella S., 842 Arnold Ave., Point Pleasant
Riley, Mrs. Georgia M., Grammar School, Highstown
Roys, Lincoln J., Franklin School, 215 Dodd St., East Orange
Rudiboc, Mari B., 876 S. 14th St., Newark
St. Thomas, George E., Broadway School No. 1, Hackensack
Salley, Mrs. Alice B., 1894 Brunswick Ave., Trenton
Samuels, Ethel Mae, 115 N. Seventh Ave., New Brunswick
Sanderson, Ethel H., Kearny Public School, Kearny
Saurman, Mrs. Bertha M., Liberty School, Tenafly Rd., Englewood
Savage, Sue E., 1280 Salem Ave., Hillside
Schmitz, E. Winifred, Memorial School, Madison St. and Gregory Ave., Passaic
Scott, Anna C., Leonia Public Schools, Leonia
Scott, Dorothea A., Midland School No. 1, Rochelle Park
Serven, Edward J., McKinley School, Newark
Serven, Isaac A., School No. 37, Parania Ave. and Erie St., Jersey City
Sexton, Wray E., 23 Hoffman St., Maplewood
Seybold, Arthur M., Dir. of College High School, State Teachers College, Montclair
Shoe, John M., Vocational School No. 2, Perth Amboy
Shotwell, Fred C., Supvg. Prin. of Public Schools, Franklin
Sickler, Edna F., 61 Pitman Ave., Pitman
Simons, Mrs. Myrtle H., 67 Salem Ave., Burlington
Smith, Mrs. Flora H., Public School No. 5, Merseles and Fourth Sts., Jersey City
Smith, Martha A., Lincoln School, South River
*Smith, William R., 270 Highland Ave., Newark
Somerville, I. B., Administration Bldg., Cottage Pl., Ridgewood
Southard, Mrs. Maud B., 425 Trinity Pl., Elizabeth
Sozio, Pasquale, 99 Clifton Ave., Newark
Stalter, Ethel, School No. 2, Montvale
Stiles, Hazel B., 122 Wildwood Ave., Pitman
Stillwell, Donald R., Browns Mills
Stone, Mary E., 15 Clarke St., Jersey City
**†Stratton, Mason A., 272 Huron Ave., Absecon
Strohoefer, F. K., 813 Ave. C., Bayonne
Stuart, Byron D., 601 Chestnut St., Westfield
Stull, Anna G., LaFayette School, Highland Park, New Brunswick
Summers, Mrs. Katherine W., William Livingston School, Union Ave., Elizabeth
Taistra, Mr. Lucyan J., Public School No. 8, Seventh and Adams St., Hoboken
Thatcher, Alfred W., Somerset School, North Plainfield
Traua, E. G., 524 Mountain Ave., North Caldwell
†Troy, Ann A., 293 Chestnut St., Nutley
Tufts, Mrs. Kathleen C., Essex Fells Public School, Essex Fells
Turnbaugh, E. L., Clinton Avenue School, Irvington
Van Auken, William D., 102 Bamford Ave., Hawthorne
Van Syckle, Blanche, Public School No. 9, Lawrence St., Perth Amboy
Ventres, Shailer W., Hamburg Turnpike, R. F. D. 1, Paterson
Voorhees, Ada Y., 32 Ross St., Somerville
Wade, Mrs. Edith Van G., Elmora School, Magie Ave., Elizabeth.
Walton, Rebecca Eyre, Moorestown Friends School, Moorestown
*Wamsley, Mrs. Jessie M., Walls School, Pitman
Warwick, Raymond, Bradley Park School, Neptune
*Wein, Dorothea M., Boyd St., Cape May Court House
Weldon, O. K., Tenakill School, Closter
Wharton, Agnes, South Tenth Street School, Newark
Whitford, Everett T., School No. 6, Paterson
Wilde, Anna A., Union Street School, 174 Union St., Ridgewood
Willey, Edith W., Public Schools, Westville
Williamson, Robert D., 39 Division St., Newark
Wimer, J. Wade, 1129 W. Sixth St., Plainfield
Wine, Chester H., 242 Gregory Ave., West Orange
Winkworth, Jessie L., 220 Ninth Ave., Haddon Heights
Witteman, Anna M., 39 N. Reid St., Elizabeth
Worrall, Lillie, 621 Kings Highway, Swedesboro
Wright, Norman A., South Avenue School, Bridgeton
Wright, Stella J., 154 Welton St., New Brunswick
Wylie, Mary T., Oliver Street School, Newark

NEW MEXICO

Arledge, Ellen H., Prin., Old Town School, Old Albuquerque
Bobo, Mrs. Irma, 309 Buena Vista Ave., Albuquerque
Calkins, Fred M., R. F. D. 2, Box 368, Albuquerque
Clegg, J. T., Junior High School, Tucumcari
Hogrefe, Harry, 1807 E. Gold, Albuquerque
**Kiker Stella, 240 S. Fifth St., Raton
McCaw, Linna K., Box 653, Artesia
McCollum, J. R., 1124 E. Silver Ave., Albuquerque
Mills, Charles L., Box Y, Hobbs
Pircher, Bertha, Swastika School, Swastika
Schupp, Ona E., 223 N. High St., Albuquerque
Tireman, L. S., University of New Mexico, Albuquerque
Watson, Dorothy, Elementary School, Hanover

NEW YORK

Adams, Norma A., 406 Turin St., Rome
Alexander, Carter, Teachers College, Columbia University, New York
Alt, Florence M., John Van Duyn School, 401 Loomis Ave., Syracuse
†Alter, Harvey E., 100 Ft. Stanwix Park N., Rome
Anderson, Ellen R., State Normal School, Potsdam
Andrews, W. B., Van Hornesville

Arnold, Mary L., 124 E. Court St., Ithaca
Ayres, George R., 305 Union Ave., Mamaroneck
Baker, Harold V., Daniel Webster School, Glenmore Dr., New Rochelle
Banker, Gilbert M., Hancock
Banta, Katherine A., 25 Marathon Pl., Port Chester
Barber, Elon L., Monroe Street School, Little Falls
Barber, E. Olive, 110 N. Main St., Gloversville
Barnett, I. Irving, Public School No. 25, Manhattan, 330 E. Fifth St., New York
Barth, Mark, 45 W. 81st St., New York
Battershall, Minnie J., 1012 Albany St., Schenectady
Beaumont, Florence, 3323 85th St., Jackson Heights, New York
Becker, Helen L., Public School No. 26, The Bronx, New York
Becker, Johanna L., Public School No. 233, Ave. B and E. 94th St., Brooklyn
Benedict, Mildred F., 5 Poole Ave., Gloversville
Bernstein, Louis, Public School No. 80, 2830 W. 17th St., Brooklyn
Betzner, Jean, Teachers College, Columbia University, New York
Blair, Mary M., Public School No. 20, Heberton Ave., Richmond, Staten Island, New York
*Blood, John L., Kemble School, 1604 Kemble St., Utica
Bloomfield, M. Elizabeth, 40 Whitfield Ter., New Rochelle
Bolen, John K., Asst. Supt. of Schools, 800 Park Ave., New York
Borrell, Victorine E., 148 Loring Ave., Buffalo
Bostick, Eva Gibbs, Rochambeau School, White Plains
Braine, Elizabeth M., 78 Cambridge Pl., Brooklyn
*Brett, F. Henrietta, School No. 25, 196 Morton Ave., Albany
Brill, Edith V., 233 E. Main St., Malone
Brogan, Helen A., 182 N. Broadway, Yonkers
Brown, Zadie, 67 Bond Ave., Malverne
Brownell, Mrs. Winifred E., 100 Wood Ave., Syracuse
Bruck, John P., 218 Potters Corners Rd., Buffalo
Buckley, Mary M., 1632 West St., Utica
Bugbee, Mrs. Nellie A., R. D. 2, Oneonta
Bullock, Caroline M., Cleveland Avenue School, Niagara Falls
Burger, I. Victor, 160 Douglas Rd., Stapleton, Staten Island
Burns, Arthur D., School No. 4, Madison Ave. and Ontario St., Albany
Burns, Mrs. Lillian O., Columbus School, Rome
Butts, Franklin A., Benjamin Franklin School, Poughkeepsie
Carl, G. Harold, School No. 82, 300 Easton Ave., Buffalo
Carlson, Clara H., 90-42 206th St., Queens Village, Long Island
Carroll, William L., Junior High School No. 156, Sutter Ave. and Grafton St., Brooklyn
Cassavant, Howe K., School No. 23, Whitehall Rd., Albany
Chambers, A. Frances, 541 Congress St., Troy
Chatfield, Hazen, Public School No. 102, 1827 Archer St., New York
**Clark, Giles D., School No. 20, N. Pearl and N. Second Sts., Albany
Clarke, Bertha E., 24 Columbia Ave., Binghamton
Clarke, Martha H., 60 W. Broad St., Mt. Vernon
Clifford, Mrs. Barbara M., Nathan Hall School, S. Fifth Ave. and Sixth St., Mt. Vernon
Cochrane, Lyda S., 413 E. Main St., Batavia
Coffin, Rebecca J., 106 Morningside Dr., New York
Cohan, Ella, S. B. Howe Elementary School, Schenectady
Cohen, Irving L., Public School No. 33, Queens Village, New York
Coldwell, Mabel D., Alplaus School, Alplaus
Coleman, Georgia Avis, Colonial School, Pelham
Collie, Mrs. Gertrude, Elementary School, Depew
Connolly, Minnie, 156 Sidney St., Oyster Bay, Long Island
Conroy, John F., 690 E. 183rd St., New York
Conroy, Marie R., 75 Mountainside Rd., Stapleton, Staten Island
†Cooper, George W., 1305 Lyell Ave., Rochester
Corbin, Mrs. Jessie E., School No. 19, West Albany
Cordes, Mrs. Edith B., School No. 5, Mt. Vernon
Corey, Clara A., School No. 35, 156 Field St., Rochester
Costello, Helen A., School No. 2, Troy
Coughlin, Catherine, School No. 17, Second Ave., Albany
Coulson, Austin R., Board of Education, City Hall, Albany
Craig, Christine, 14 Elm St., Whitesboro
Craig, Gerald S., Teachers College, Columbia University, New York
Crittenden, Harold C., Armonk Public School, Armonk
Crump, Grace L., Wolden Arms, Wolden Rd., Ossining
Dalton, Kathryn H., School No. 5, Troy
Dano, Anna M., 200 William St., Watertown
Darmstadter, Charlotte, 562 Humboldt Pkwy., Buffalo
Davidson, Flora T., 1565 New York Ave., Brooklyn
Davis, Grace L., Lincoln School, E. Lincoln and Archer Aves., Mt. Vernon
Davis, Victor H., 210 S. Grand Ave., Poughkeepsie
Day, Ralph Emerson, Terrace Ave., Hillburn
Delaney, Mary C., School No. 8, 157 Madison Ave., Albany
Demmon, Ruby G., 21 Mechanic St., Ballston Spa
Dempsey, Mary A., Wetmore Street School, Wetmore St., Utica
Deveson, Addie E., Public School No. 32, Manhattan, 357 W. 35th St., New York
Devine, Mary J., 19 Clinton St., Norwich
DeVinney, Mabel A., Brighton School, 2200 S. Salina St., Syracuse
Dodge, M. M., Public School No. 30, Westerleigh, Staten Island
Donlin, Margaret E., 41 Woodward Ave., Buffalo
Donnelly, Ella Marie, Hutchinson School, Pelham
Donohue, John J., 4550 Carpenter Ave., New York
Donovan, Esther, Cathedral Avenue School, Garden City
Duffy, Fred H., George Washington School, Kenmore
Dukeshire, Stanley C., Rockledge Manor, Yonkers
Dunn, Rachel, 41 S. Pine Ave., Albany

Dwyer, Mrs. Mary M., Patterson
Ebeling, Elsa, Public School No. 208, Ave. D and E. 49th St., Brooklyn
Ebert, Jessie D., 108 Union St., Schenectady
Eckhardt, Florence, 45 Lake St., Hamburg
Ehrenfeld, Abraham, 251 W. 92nd St., New York
Elliot, Elizabeth M., Public School No. 14, Yonkers
English, Amy A., Public School No. 5, 122 Tillary St., Brooklyn
Erdwurm, Lucy, 430 E. 86th St., New York
Ernst, Christine C., 366 Quail St., Albany
Faucett, Edith T., 206 Stewart Ave., Ithaca
Fay, Mamie, Public School No. 122, Ditmars and Van Alse Ave., Long Island City
Felicitas, Sister M., St. Ephrem School, 74th St. and Ft. Hamilton, Brooklyn
Finkelstein, Mary E., Public School No. 42, 71 Hester St., New York
Fitzell, Ruth T., Public School No. 5, Queens, Long Island City
Fitzgerald, Catherine, School No. 21, Albany
Flanders, Jesse K., 36 W. Seneca St., Oswego
Fletcher, Mrs. Eudora, Homewood School No. 180, 56th St. and 16th Ave., Brooklyn
Flynn, Margaret E., Fifth Street School, Niagara Falls
Forssell, Alva E., 119 College Ave., Westerleigh, Staten Island
Forsythe, Edmund M., Abraham Lincoln School, Port Chester
Foster, Electa L., North Roslyn Elementary School, Roslyn
Fox, Benedict, Public School No. 45, Queens, 150th St. near Rockaway Blvd., South Ozone Park
Fox, Henry W., Public School No. 74, 189th St. and Crotona Ave., New York
Frail, Jennie A., Theodore Roosevelt School, Johnson City
Friedman, Shirley, 157 W. 79th St., New York
Gallup, Jackson, School No. 17, 223 Orange St., Rochester
Gardner, Willard B., 320 Mulry Lane, Lawrence
Gates, Arthur A., 14 Main St., Port Byron
Genske, Emma, No. 4 School, 752 Central Ave., Dunkirk
Gewirtz, Max, Public School No. 230, Albemarle Rd. and Gravesend Ave., Brooklyn
Gifford, Mary E., Public School No. 25, Warburton Ave., Yonkers
Goldin, Myron R., Public School No. 187, 65th St. and 12th Ave., Brooklyn
Goldstein, Henry M., Public School No. 238, E. Eighth St. and Ave. P., Brooklyn
Gorham, Mary E., 308 N. Brandywine Ave., Schenectady
Gottlieb, Ida R., 122 Bay 26th St., Brooklyn
Gould, Clifford M., 20 Kenwood Dr., Kenmore
*Gouldin, Henry C., Washington Irving School, Syracuse
Grady, Joseph E., 1127 Dewey Ave., Rochester
Graff, George E., Junior High School, Hicksville
Graham, Minnie S., 357 N. Fulton Ave., Mt. Vernon
†Greenberg, Joseph, 449 Second St., Brooklyn
Guerry, G. Mercer, 85 Nassau Ave., Malverne, Long Island
Haggerty, Marie, 430 Barry Ave., Mamaroneck
Hakes, W. Gaylord, Grade School, Hyde Park
Hall, Ava M., Center Street School, Oneonta
Hall, Mrs. Margaret M., 205 Seventh Ave., N. Troy
Halligan, Thomas C., Public School No. 164, Manhattan, 401 W. 164th St., New York
Halpin, Mary A. C., School No. 13, Troy
Handley, Mrs. Myrtle C., 21 Trumbull Pkwy., Batavia
Harris, Daisy M., 1826 Valley Dr., Syracuse
Hartill, Rufus M., Public School No. 87, Queens, Brooklyn
Hathaway, Edna E., Park Street School, Gloversville
Hatton, May C., Public School No. 81, 256th St. and Riverdale Ave., The Bronx, New York
Haven, Mabel, 272 S. Broadway, Yonkers
Hawks, Burt D., Wetmore School, 2645 Oneida St., Utica
Hayden, Mrs. Rena C., John Lewis Childs School, Floral Park
Healey, Gertrude M., Public School No. 26, The Bronx, 101 W. Burnside Ave., New York
Hemstreet, A. Earle, School No. 60, 238 Ontario St., Buffalo
Hickok, Mary K., 39 Montgomery St., Ilion
Higgins, Gordon H., School No. 70, Buffum St., Buffalo
Hinderland, Laura J., 14 Beach Rd., Great Neck, Long Island
Hirschbeck, Loretta M., 365 Putnam Ave., Port Chester
Hirsdansky, Simon, Public School No. 4, 1701 Fulton Ave., New York
Hoefling, Caroline E., Public School No. 19, The Bronx, Katonah Ave. and 237th St., New York
Hoffman, Josephine L., 371 Lake Ave., Rochester
Hogan, A. Elizabeth, 22 Judson St., Albany
Hogg, Elizabeth, 40 Floral Ave., Binghamton
Holmes, William H., Supt. of Schools, 60 S. Third Ave., Mt. Vernon
Hopkins, Amelia M., 245½ Mohawk Ave., Scotia
Horset, Antoinette, Pringle School, Batavia
Hosic, James F., 50 Rockland Ave., Yonkers
Houghton, Le Grand B., 189 Bryant St., North Tonawanda
Howell, Mrs. Minnie M., Public School, Skaneateles
Huddle, Otto E., High School, Briarcliff Manor
Huggard, Ethel F., Junior High School No. 162, Brooklyn
Huggin, Ellen, 509 Central Ave., Dunkirk
Hughson, Arthur, Public School No. 151, Queens, 31st Ave. and 50th St., Woodside, Long Island
†January, E. L., Box 748, Elmsford
Jenks, Elsie L., West End School, Lynbrook
Jenny, Orlo K., Roosevelt School, New Rochelle
Johnson, Marguerite A., 2 Crampton Ave., Great Neck, Long Island
Johnson, Ward L., The Lawrence School, Hewlett, Long Island
Johnston, Anna C., Public School No. 59, The Bronx, Bathgate Ave. and 182nd St., New York

Johnston, Sara W., Maple Avenue School, Niagara Falls
Jones, Arthur E., 221 Leicester St., Port Chester
Joyce, Charles W., 223 Deerfield Dr., Rochester
Kaplan, Michael, Public School No. 44, 420 Madison St., Brooklyn
Kennedy, Agnes, R., Public School No. 148, Jackson Heights, Long Island
Kent, Anson E., 345 Atlantic Ave., Cedarhurst
Kenyon, Lillian B., Montgomery Street School, Johnstown
Kidney, Glenn H., 32 Pocantico Rd., Ossining
Kingsley, Emma E., 660 N. Main St., Elmira
Kinsman, Daniel F., Milton Avenue School, Amsterdam
Klein, Arthur, 1458 York Ave., New York
*Kline, Ira M., 177 Gibson Ave., White Plains
Kline, Pearl, 1154 State St., Watertown
Kornfeld, Louis, Public School No. 30, 165 Conover St., Brooklyn
Krause, Arthur K., 185 Wadsworth Ave., New York
Kumpf, Carl H., 230 Hendricks Blvd., Eggertsville
Lafferty, E. M., The Mohonk School, Mohonk
Lamb, Elizabeth B., 121 West St., Johnson City
Lansing, Hugh H., School No. 1, Troy
Larry, Eva M., Public School No. 78, Manhattan, 362 Pleasant Ave., New York
Lawlor, Caroline E., 4217 167th St., Flushing
Lawlor, Mary, Salem Hyde School, 450 Durston Ave., Syracuse
Lawrence, Mrs. Sara W., Ridge Street School, Glens Falls
Layman, Arthur E., 39 Tillinghast Ave., Menands
*Le Baron, Walter A., 1032 Delamont Ave., Schenectady
Leidt, Edna J., 929 Peace St., Pelham Manor
Lester, Florence G., 322 Bedford Ave., Buffalo
*Lewis, Carl E., 13 Eastman Ter., Poughkeepsie
Lindquist, Margaret A., 2475 Palisade Ave., Spuyten Duyvil, New York
Lisle, Herbert, School No. 12, Troy
Lockhart, Raymond J., Public School, Massapequa
Lodato, August, Public School No. 167, 1025 Eastern Pkwy., Brooklyn
Lodge, Emma L., School No. 74, 126 Donaldson Rd., Buffalo
Loope, John A., Public School No. 63, Queens, 9015 110th Ave., Ozone Park, New York
Lortcher, Mrs. Dorothea K., 3309 Lake Ave., Rochester
Lotz, Christine L., Lincoln Park School No. 44, Rochester
McCormick, Alice V., 1349 Lexington Ave., New York
McElroy, Edith L., Liberty Street School, Nyack
McHenry, Margaret G., 910 Park Pl., Brooklyn
McKernan, Mary L., Kernan School, Utica
McKiernan, Katherine A., School No. 1, Bassett and Franklin Sts., Albany
McLaughlin, Katherine, School No. 7, 165 Clinton Ave., Albany
McLaughlin, May, School No. 2, 29 Chestnut St., Albany
McLoughlin, Helen M., 44 Mt. Pleasant Ave., Mamaroneck
McNeill, George A., Andrews School No. 9, 261 Joseph Ave., Rochester
McSwyny, Mary, 70 Ocean Pkwy., Brooklyn
MacDonald, Donald B., Fairfax Hall, Woodmere, Long Island
MacGregor, Helen V., George H., Nichols School, Endicott
Mackay, Eleanor C., Public School No. 96, The Bronx, 650 Waring Ave., New York
†Mackintosh, Margaret C., 1224 Ditmas Ave., Brooklyn
MacLachlan, E. Helen, School No. 34, 516 Lexington Ave., Rochester
Maguire, Matilda E., Merrick School, Syracuse
Mahoney, Mary A., 738 Buffalo St., Jamestown
Maloney, Mary H., Public School No. 20, Troy
Manheim, Mrs. Sophie C., 610 E. 12th St., New York
‡Martin, Earl F., Hogansburg
Martin, P. H., Whitesboro Central School, Whitesboro
Maynard, Mabel A., 2511 Sunset Ave., Utica
Mazurowska, Marta, School No. 59, 761 Glenwood Ave., Buffalo
Merriman, Charlotte, 148 Main St., Port Washington
Merritt, Mrs. Lillian H., 1305 N. Madison St., Rome
Miner, Mary E., 47 Grand Ave., Johnson City
Minuse, John M., 501 Franklin St., Port Chester
Molony, Mrs. Vern B., Public School No. 102, The Bronx, 1827 Archer St., New York
*Monahan, Jane E., Public School No. 92, 700 E. 179th St., The Bronx, New York
Mooney, Martha H., 514 13th St., Watervliet
Montgomery, Alice M., 11 Livingston Park, Rochester
Morey, Anna A., School No. 14, Troy
Morey, Benjamin I., School No. 16, 41 N. Allen St., Albany
Morrison, Carolyn E., 1011 Lakeview Ave., Schenectady
Morrison, J. Cayce, Asst. Commr. for Elem. Educ., State Education Dept., Albany
Mossman, Lois Coffey, Teachers College, Columbia University, New York
Moxie, Ella H., Henry B. Endicott School, Endicott
Moyer, Ellena C., Sanford Street School, Glens Falls
Murphy, Margaret M., 120 Oak St., Hudson Falls
Nathan, Caroline K., Public School No. 39, The Bronx, Longwood Ave., Kelly and Beck Sts., New York
Nelson, Amanda, 1231 N. Main St., Jamestown
Nichols, May A., 110 W. Seneca St., Ithaca
Nickles, George F., Children's Village, Dobbs Ferry
Nifenecker, Eugene A., Bureau of Reference, Research and Statistics, Board of Education, 500 Park Ave., New York
Norris, Bessie, 315 E. Main St., Batavia
*Norton, Louise V., 103 Merrimac St., Buffalo
Oakley, Leslie S., Box 35, Garnerville
Obermeier, Minnie, Public School No. 101, Manhattan, 611 W. 156th St., New York
O'Brien, Edward W., School No. 3, Troy
O'Brien, Josephine G., 110 New York Ave., Brooklyn
O'Day, Constance, 110 Meadow Rd., Buffalo
O'Keefe, Emma M., School No. 37, 353 Congress Ave., Rochester

Olmstead, Helen M., 150 Oxford Ave., Buffalo
O'Malley, Margaret, Public School No. 66, Tacoma and Parkside, Buffalo
O'Neill, Stella M., 279 Rosewood Ter., Rochester
Orr, Mrs. Mabel L., 200 Lexington Ave., Rochester
Orr, Marion C., John A. Nichols School, 269 North Ave., Syracuse
Owen, Reba E., Cortland Street School, Geneva
Paine, Olive A., School No. 29, Moran St., Rochester
*Painter, Fred B., 416 S. Aurora St., Ithaca
Palmer, Gertrude A., Public School No. 59, The Bronx, 182nd St. and Bathgate Ave., New York
Paris, Florence E., 32 Linden Ave., Buffalo
Parsons, Miss Marion, 303 Cherry Rd., Syracuse
Patterson, Charlotte, 270 Washington St., Hempstead, Long Island
Pearson, Mrs. Georgia King, 6 Lewis Pkwy., Yonkers
Pence, Amos C., Main Street School, Huntington, Long Island
Penfold, Arthur, 332 Beard Ave., Buffalo
Perry, N. E., Blodgett Mills School, Dist. No. 11, Blodgett Mills
Phillips, Ellen M., Public School No. 188, Manhattan, 131 Lewis St., New York
Piedalue, Mary R., Edgewood Elementary School, Scarsdale
Piper, Sarah M., 230 First Ave., Frankfort
Pitts, F. L., Croton School, 500 E. Raynor Ave., Syracuse
Plantz, Nina, Miller Rd. and Sunset Ave., Hicksville, Long Island
Pois, Cecelia, 2685 Grand Concourse, New York
Powell, Mary E., 42 Attorney St., Hempstead, Long Island
Power, Leonard, 417 Riverside Dr., New York
Powers, Katherine B., Horace Mann School No. 13, 81 Hickory St., Rochester
Powlesland, Walter H., 101 Grant Ave., Syracuse
Priddis, Milton R., School No. 11, 500 Webster Ave., Rochester
Pugh, Sterling B., 217 Clinton Ave., New Rochelle
Pugsley, Chester A., 1191 Elmwood Ave., Buffalo
Pulling, Rowland J., 218 Glen Ave., Scotia
Putnam, Lena M., 602 N. James St., Rome
*Quirk, Florence J., Lincoln School, Batavia
Raben, Morris, Public School No. 90, The Bronx, 166th St. and Sheridan Ave., New York
Rado, Alfred, Public School No. 89, The Bronx, 980 Mace Ave., New York
Ramsdell, Florence R., 70 Union Ave., Lynbrook
Randolph, Esle, Public School No. 13, 161 Hyland Blvd., Staten Island
Raphael, Selma, 569 W. Chester St., Long Beach
Ratcliff, Frank B., 112 Henry St., Kingston
Raynor, Bertha L., 606 Lodi St., Syracuse
Reigart, John F., 31 Euclid Ave., Yonkers
Reilly, Frederick J., 63 Hamilton Ter., New York
Reiten, Mary S., School No. 3, Albany
Reynolds, Maybelle P., 771 Madison Ave., Albany
Rhoads, Luke C., 258 Gramaton Ave., Mt. Vernon
Richardson, Anne, Public School No. 241, President St. near Classon Ave., Brooklyn
Riley, Ruth V., Big Cross Street School, Glens Falls
Riester, Lauretta F., 588 Linwood Ave., Buffalo
Robbins, Lovenia M., 161 Union St., Hamburg
Robertson, John W., Bellerose School, Floral Park
Roe, Jennette G., School No. 18, Bertha and Hurlbut Sts., Albany
Ronnei, Herman L., Union Free School, Valhalla
Ross, Lazarus D., 775 E. 19th St., Brooklyn
Rowley, Mary V., 94 Innis Ave., Poughkeepsie
Sands, Eugenie C., Public School No. 169, 44th St. and Seventh Ave., Brooklyn
Savery, Kate L., Hillburn Brook School, Box 255, Hillburn
Savage, Leslie, School No. 7, 219 Pierpont St., Rochester
Schatteles, Mrs. Ruth, 780 West End Ave., New York
Schultz, Frederick, 346 N. Park Ave., Buffalo
Scudder, Miss Augustine L., Lincoln School, Huntington
Seeberger, Statira, 533 Fifth Ave., Watervliet
Selby, Miriam F., 152 Ross Ave., New Dorp, Staten Island
Shack, Jacob H., Halsey Junior High School, 736 Knickerbocker Ave., Brooklyn
Shaw, Helen V., 94 South St., Auburn
Shea, Mrs. Lillian M., Public School No. 131, 84th Ave. and 172nd St., Queens, Jamaica
Shean, Mary C., 17 Nepeian Rd., Tarrytown
Shellington, A. Mary, 530½ Fourth St., Niagara Falls
Sherburne, M., Louise, 264 Beach, 139th St., Rockaway Beach
Sherwood, Mae, 1502½ E. Main St., Endicott
Shufro, Jacob J., 940 Grand Concourse, New York
Sicklick, Isabelle, Public School No. 94, The Bronx, King's College Pl., New York
Silverman, Estelle L., 675 West End Ave., New York
Simmons, Harry S., 16 Bay View Ter., Newburgh
Simpson, Mortimer, Public School No. 170, 7109 Sixth Ave., Brooklyn
Slater, Freda R., 113 Ferris Pl., Ithaca
Smallenburg, Ella, 370 McKinley Pkwy., Buffalo
Smallwood, Winifred, Pere Le Moyne School, 1540 Le Moyne St., Syracuse
Smith, Florence A., Terrell Avenue School, Ocean Side
Smith, Kaia F., Lincoln School, Scotia
Smith, Sim Joe, Asst. Supt. of Schools, New Rochelle
Smith, Vernon G., Supt. of Schools, Box 128, Scarsdale
Snapp, Jennie F., George Washington Junior High School, Endicott
Snyder, Charles A., School No. 24, Delaware and Dana Aves., Albany
Spacht, Charles A., Henry Barnard School, New Rochelle
Specht, Louise, 103 Quentin St., Kew Gardens, New York
Spencer, Cecil F., 113 Gabriel Ave., Franklin Square, Long Island
Spillane, Katherine, 98 Brookfield Rd., Rochester
Spurgeon, Mrs. Grace H., 112-29 175th St., St. Albans

Stantial, Robert S., 328 E. 198th St., New York
Stanton, Clifford A., 101 Barton Ave., Utica
Stapleton, Josephine Frances, 1360 Merriam Ave., New York
Stark, Clifford, Audubon School No. 33, 250 Grand Ave., Rochester
Stecher, Mrs. Elizabeth M., Public School No. 204, Brooklyn
Steiner, Fredericka, 945 West End Ave., New York
Stewart, Ruth A., Chatsworth Avenue School, Larchmont
Stinebrickner, Reinald M., George Washington School, 70 Mayfair Ave., West Hempstead
Sumner, Bertha E., 110 W. Main St., Batavia
Sumner, S. Clayton, 356 Kennedy St., Syracuse
Swannie, Evelyn H., 376 Urban St., Buffalo
Swarts, Arlington, Durand-Eastman School, Point Pleasant, Irondequoit
Sweeney, Agnes L., Ashland Avenue School, Niagara Falls
Swift, Charles B., 21 Chateau Ter., Snyder
Tatum, Helen Clare, 160 Ivy St., Oyster Bay
Taylor, E. D., Typewriter Educational Research Bureau, 100 E. 42nd St., New York
Terrell, Mrs. Madelaine H., 84 Cedar Ave., Patchogue
Tholl, Anna, School No. 22, 292 Second St., Albany
Thomas, John B., 46 E. Second St., Riverhead
Thomas, M. Josephine, Hope Farm School, Hope Farm
Thomas, Rufus G., 138 Hertford St., Syracuse
*Thomas, William, Lincoln School, New Rochelle
Thompson, Harry B., Woodbury, Long Island
Tierney, Mrs. Virginia, Stephenson School, New Rochelle
Tiffany, Pearl M., 154 Radford St., Yonkers
Titus, Charles L., Lloyd Harbor School, Huntington
Topping, Eva Z., 199 Bleecker St., Gloversville
Trace, Charles T., 7606 60th Lane, Ridgewood, Brooklyn
Traphagen, M. H., 39 Parkway E., Mt. Vernon
Tuger, Margaret E., General Herkimer Hotel, Herkimer
Vail, May H., 379 Washington Ave., Brooklyn
Van Arnum, Eugenia, School No. 15, Troy
Van Arsdale, Frances, Central High School, Binghamton
Viemeister, Edmund H., Cecelia Pl., Seaford, Long Island
*Vincent, H. D., School No. 16, Troy
Vlymen, Henry T., Public School No. 81, Queens, 559 Cypress Ave., Ridgewood New York
Waite, Edna A., 395 Clinton Ave., Brooklyn
Wallstein, D. Daniel, Junior High School No. 142, 114th Ave. and 142nd St., Jamacia, Long Island
*Walsh, Mary A., 1287 Third Ave., Watervliet
*Warner, Ena C., Kingsboro Avenue School, Gloversville
Warner, Stanley F., 352 Summit Ave., Cedarhurst, Long Island
Webster, George E., Rye Grammar School, Rye
Weed, Leola D., Frances W. Pennington School, Mt. Vernon
Wehle, Hanna, 14 Roosevelt Ave., Larchmont
Weis, Helen, 77 Irving Ter., Kenmore
Werner, Mrs. Edith F., Robert Fulton School, Mt. Vernon
West, Parl, 93 Main St., Potsdam
West, Ralph G., 2 Spoor Ave., Poughkeepsie
Weyant, Walter B., 330 Lionel Ave., Solvay
Whalen, Frank D., Public School No. 3, The Bronx, 368 E. 157th St., New York
White, Edith C., 73 De Sales Pl., Brooklyn
Whitten, Celia B., 9 Ridge Ave., Port Jervis
Wikander, Elin, 1 Hanson Pl., Brooklyn
Williams, Marvin C., 33 N. Washington Ave., Hartsdale
Wilson, Helen, 738 St. Marks Ave., Brooklyn
Wilson, Mrs. L. P., 8 Ridge Ave., Walden
Woodall, Adelaide N., The Loudonville School, Loudonville
Woodard, DeWitt S., 507 S. Loder Ave., Endicott
Wright, Mrs. Kathryn Ward, School No. 39, 145 Midland Ave., Rochester
Wright, Mrs. Louise J., 54 Elmowood Ave., Geneva
Wylie, Anna, 2223 Whitney Ave., Niagara Falls
Yeager, Fern M., Nott School, Schenectady
Youker, Bliss J., 218 Wallace Ave., Buffalo
Zuest, Mrs. Dorothea, Nicholai Street School, Hicksville, Long Island

NORTH CAROLINA

Ancrum, Boyd L., Annie W. Holland School, Box 5, Rocky Mount
Anderson, Albert H., Columbian Heights School, Winston-Salem
Baxter, E. B., 232 Merriman Ave., Asheville
Bostian, Annie E., 328 E. Bank St., Salisbury
Brown, Mrs. E. S., 504 Beaumont Ave., Charlotte
Burch, Mrs. Eva H., 317 E. Boulevard, Charlotte
Burgess, Fred Ross, Fort Barnwell School, Dover
Carson, Miss Queen M., 19 Soco St., Ashville
Cornwell, Laura, Marion School, Shelby
†Cox, Herbert R., Star Route, Bennett
De Berry, Nena, 714 E. Franklin St., Chapel Hill
Doxey, Elsie, Colonial Drive School, Thomasville
Edwards, C. T., 312 Highland Ave., Rocky Mount
Farthing, James A., Gillespie Park School, Greensboro
Fitzgerald, Ruth, The Woman's College, The University of North Carolina, Greensboro
Godwin, Cleva, Box 33, Godwin
Greenlee, Mary M., 109 S. Broad St., Mooresville
Hart, John M., Caldwell School, Greensboro
Hearne, Clara, Box 577, Roanoke Rapids
Helms, H. A., Central Junior High School, Greensboro

Hill, Josephine, Forest Park School, Winston-Salem
Hobgood, Scotia S., Harvey Elementary School, Kinston
Hollowell, Miss Orem B., South End School, Reidsville
Holman, Elizabeth F., 209 E. Morgan St., Raleigh
Jamison, Florence, 908 W. Fourth St., Charlotte
Johnson, Gordon G., Box 61, Weaverville
Johnson, Mrs. R. F. J., 904 Carrick Ave., High Point
*Jones, Mrs. Almonte, Box 353, Hendersonville
Jones, Lily N., 923 Monmouth Ave., Durham
Kelly, L. W., Charles D. McIver School, W. Lee St., Greensboro
Lewis, W. T., Avondale
Lowrance, Annie Laurie, Fairview School, Winston-Salem
McConnell, Thomas L., Route 1, Asheville
McDonald, Crummell Howe, 301 Queen St., Wilmington
McIntyre, Kate A., Central School, Laurinburg
McNairy, Ethel, 507 Arlington St., Greensboro
Maybry, Lillian, Grimes School, Lexington
Merritt, Mrs. R. A., 1400 Spring Garden St., Greensboro
*Miller, J. E., John H. Small School, Washington
*Moore, Mrs. J. C., 1011 Rotary Dr., High Point
Nance, Lillian, Lumberton
O'Briant, Mary Vann, Box 113, Bryson City
Oliver, Mrs. D. B., B. T. High School, Lumberton
Owen, Alma H., Cecil School, Lexington
Pannill, Florence, 129 S. Mendenhall St., Greensboro
Parker, Mrs. B. C., Central Elementary School, Albemarle
Paylor, Ivey, 1006 Johnson St., High Point
Phillips, Guy B., Box 991, Chapel Hill
Rabe, Anne, Eureka
Reid, Florence M., Box 299, Lexington
Reynolds, U. S., 1617 E. 14th St., Winston-Salem
*Schroder, Mrs. Dan R., 416 Gatewood Ave., High Point
Sherwood, Ann V., 322 S. Ellis St., Salisbury
Sherwood, Mrs. M. B., 214 E. Morgan St., Raleigh
Smith, H. B., Box 1007, New Bern
Stafford, Susie F. 604 E. Davis St., Burlington
Steelman, Max R., 538 Eighth Ave., Hickory
Stine, Glenn, 608 N. Washington St., Shelby
Wahl, Frances, East Carolina Teachers College, Greenville
*Watson, Mrs. Margie Marsh, Aycock School, Greensboro
Wharton, Vera, Irving Park School, Greensboro
**†Wilson, Mrs. A. R., 202 S. Dillard St., Durham
Wortham, Frances, 310 Corona St., Winston-Salem

NORTH DAKOTA

Brandt, Ivy, 914 Fifth Ave., S., Fargo
Champine, Jennie L., 388 Seventh Ave., S., Fargo
Eininger, H. J., 341 Elmwood Ave., Fargo
Hanson, Miss Signe, Jefferson School, 16th St., S., Fargo
Hartney, Eleanor M., 416 Eighth St., S., Fargo
Hicks, Mrs. Nellie A., 704 Third Ave., N., Fargo
Hoag, Gertrude E., Box 208, Fargo
†Lobben, Clara H., 902 Eighth St., N., Fargo
Olsen, Gustava, 1126 Fourth St., N., Fargo
Phillips, Adelaide, Clara Barton School, 1415 Eighth Ave., S., Fargo
Schroeder, Elroy H., Supt. of Schools, Grand Forks
Sinclair, Glynn, Box 297, Minot
**Walker, Mrs. Sadie A., 710 Tenth St., S., Fargo
Wilson, Seth, Turtle Mountain Consolidated Indian School, Belcourt

OHIO

Adams, Mrs. Jennie H., 87 Eber Ave., Akron
Adams, Mina L., 537 E. Buchtel Ave., Akron
Adel, Mrs. Edna P., 25 N. 21st St., Columbus
Allen, Cora F., 872 S. Champion Ave., Columbus
Allen, W. Paul, Garfield Elementary School, 4840 Turney Rd., Garfield Heights
Alspach, V. F., 831 Askin, Maumee
Andrew, Ellen B., Kilgour School, Herschel Ave., Cincinnati
Andrix, Edith, 1556 E. 82nd, Cleveland
Arbuckle, Daisy V., 1818 Haldane Rd., Cleveland
Arey, Essie, Hoffman School, Durrell and Merrimac, Cincinnati
Armstrong, J. J., 2718 Hillman St., Youngstown
Arnold, E. J., Supt. of Schools, Nelsonville
Atherton, Ralph, Cleves School, North Bend
Augspurger, R. E., R. R. 3, Hamilton
Bair, Sara A. F., 1523 E. Boulevard, Cleveland
Bell, Maud M., 520 Park Ave., Miamisburg
Benedict, Myrtle L., 1236 Westlake Ave., Lakewood
Bevington, Rachel, Roosevelt School, Lincoln and Athens Aves., Lakewood
Bishop, Bertha, Wayne School, Wayne and Western Ave., Toledo
Bishop, Evangeline, 2417 Overlook Rd., Cleveland Heights
Biszantz, Cina L., 11311 Clifton Blvd., Cleveland
Boardman, Ruth, West School, Delaware
Borden, Ruby Lynn, 719 Euclaire Ave., Bexley, Columbus
Brandt, Hazel M., 2636 Green Rd., South Euclid
Brett, Charlotte J., 16001 Fernway Rd., Shaker Heights, Cleveland
Brooks, M. Emma, 1108 The Commodore, Euclid Ave. and Ford Dr., Cleveland
Brown, Alice, Delason School, Youngstown
*Brown, Winfred Q., Kennedy School, Cincinnati
Broud, Edith M., Clyde
Bruhn, Carrie C., 10602 Wade Park Ave., Cleveland
Burbank, Nelson L., George F. Sands School, Cincinnati
Burk, Ellice E., 7805 Franklin Ave., Cleveland
Butz, Albert G., R. R. 3, Hamilton
Callahan, C. O., Siebert School, 400 Siebert St., Columbus
Campbell, Bess M., Parkland School, Toledo
Case, Mary E., 21540 Detroit Rd., Rocky River

Chidlaw, W. M., Sayler Park School, Cincinnati
Cleland, Lillian A., 2444 Lee Rd., Cleveland Heights
Conger, J. A., East School, Delaware
Cook, Selda, 5810 Clinton Ave., Cleveland
Corlett, Bessie M., 8706 Tioga Ave., Cleveland
Covey, Cora L., 384 Grand Ave., Akron
Craig, H. M., Route 5, Van Wert
Cram, Mrs. Le Vieve W., 1758 16th St., Cuyahoga Falls
Crocker, Zillah M., Walbridge School, Toledo
Cronin, John, Madisonville School, Ward and Prentice Sts., Cincinnati
Curfman, Bessie Fay, Harris School, Akron
Dallas, Cecil M., 103 Willis Ave., Youngstown
Dalton, Bess, 1574 Clarence Ave., Lakewood
Daly, Margaret, 4053 W. Eighth St., Cincinnati
Daugherty, Grace, 2079 Dowd St., Lakewood
Davidson, M. Mabel, 1316 Grand Ave., Dayton
Dennis, Ralph L., 819 Elm St., Martins Ferry
Dennis, S. C., Supt. of Schools, Toronto
Dietz, Florence A., 1352 W. Clifton Blvd., Lakewood
Diggins, S. Grace, 1690 W. 31st Pl., Cleveland
Dill, Clara E., 1699 Green Rd., South Euclid
Dingman, Ruth, Elm Street School, Youngstown
Ditto, Fanny, 1653 Woodland Ave., Canton
Dolan, Edith A., 3376 Reading Rd., Cincinnati
Dombaugh, Alice L., 283 N. State St., Marion
Downing, Georgiana, 2085 Cornell Rd., Cleveland
*Eldridge, Amy, Bancroft School, Wychwood Lane, Youngstown
Elliott, Blanche, 1136 Orchard St., Coshocton
Eversole, Charles D., Route 1, Basil
Ewan, Sylvia, Highlands School, Eastern Ave. and Lewis St., Cincinnati
Eyler, Harriet M., 149 N. Main St., London
Fennell, Mrs. Bertha A., 3305 Tullamore Rd., Cleveland Heights
Finkbine, Fred T., R. R. 1, Middletown
Fisher, Jessie G., McKinley School, Cincinnati
Fitzpatrick, Mary, 2022 E. 77th St., Cleveland
Flessa, H. L., Taft School, Cincinnati
Fouts, Bessie L., 115 N. Williams St., Dayton
Fowler, Lena M., 1332 Logan Ave., N. W., Canton
Fox, Ralph L., Caledonia School, East Cleveland
Frank, George R., McGuffey School, Columbus
Franz, George F., 109 W. McMillan St., Cincinnati
Frederick, L. E., 1832 Auburn Ave., Dayton
Gabriel, Florence, 7338 Euclid Ave., Cleveland
Geis, Harry E., Taft School, Youngstown
Gericke, Meta, 3182 W. 14th St., Cleveland
Graham, Florence M., R. F. D. 1, Chesterland
*Grant, Bessie, 559 Liberty St., Conneaut
Griffiths, Ethel, Garfield School, Detroit at Grace Ave., Lakewood
Grimes, Ruth, 373 W. Glenaven Ave., Youngstown
Guelker, Herbert, Webster School, Cincinnati
Haddow, Mary A., 1625 Ohio Ave., Youngstown
Haldane, Jean A., 3040 Berkshire Rd., Cleveland Heights
**Hammond, L. Daisy, 111 Oakwood Ave., Oakwood Village, Dayton
Hannum, Laura A., 236 N. Mead St., Zanesville
Hanthorn, Alice, 45 E. 212th St., Cleveland
Harry, David P., Jr., Western Reserve University, Cleveland
Hart, Helen A., Chase School, Toledo
Hasemeier, Margaret E., Peaslee School, Cincinnati
Hasty, Paul L., 810 E. Main St., Xenia
Hauer, John S., Sixth District School, Cincinnati
Heiser, Bess M., 11 Wroe Ave., Dayton
Henschen, Laura H., 3444 Marvin Ave., Cleveland
Hollahan, Catherine E., 2002 Wayne Ave., Dayton
Howser, Elma B., 325 Franklin St., Marion
Hoxter, Truman, 78 May Court, Chagrin Falls
Hutt, Martha K., 3328 Euclid Ave., Cleveland
Irey, Ferne, 528 Warren Ave., Youngstown
Jack, Mary E., Coventry School, Coventry Rd., Cleveland Heights
Jacobs, F. Rudolph, Carson School, Cincinnati
Jahn, Anna M., 1222 Shorb Ave., N. W., Canton
Johnson, Alma E., 16414 Madison Ave., Lakewood
Johnston, Ella M., 2995 Scarborough Rd., Cleveland Heights
Judd, Harriet A., West Broad Street School, Columbus
*Judd, Merrill E., R. F. D. 1, Milford
Kaefer, William, 407 Ludlow Ave., Cincinnati
Karp, Esther, 308 High Ave., N. W., Canton
Keys, Mary F., 1906 E. 82nd St., Cleveland
King, Dorothy D., 81 N. Warren Ave., Columbus
Kingsborough, Hazel, 1427 E. 111th St., Cleveland Heights
Kinker, Minnie L., 1242 Broadway St., Toledo
Kleinsmith, Sylvia N., Madison School, Lakewood
Kloepfer, Blanche, Giddings School, 2250 E. 71st St., Cleveland
Knight, Nellie D., 3093 Ashwood Rd., Cleveland
Kuehn, Nita E., 2708 Clark Ave., Cleveland
Lautenschleger, Earl, 262 Harwood St., Elyria
Layland, Ethel E., 1367 Glenn Ave., Columbus
Logue, Leona W., Stewart Avenue School, Columbus
Losch, Adela M., 11314 E. Boulevard, Cleveland
Loudon, Agnes V., Oxford School, 914 Oxford Rd., Cleveland Heights
Lowe, C. E., McGregor School, 17th and Vine Ave., S. W., Canton
Lowe, Florence A., 3271 W. Boulevard, Cleveland
McAstor, Alice N., 784 Wall St., Akron
McCoy, Leo E., 416 Hancock St., Sandusky
McGuire, Gertrude H., 1835 Belmore Rd., East Cleveland

McNabb, Margaret, 25 W. Rayen Ave., Youngstown
Madden, Lillian, 382 Spicer St., Akron
Markowitz, Martha B., 2600 Hampshire Rd., Cleveland
Marshall, W. B., East Columbus School, Rarig and Seventh Aves., East Columbus
Martin, O. C., Oakley School, Cincinnati
Matthews, Wayne Taylor, 14 Palmer St., Athens
May, Laura M., 1377 E. 112th St., Cleveland
Meador, Mildred, Crippled Children's School, 335 Rockdale Ave., Cincinnati
Meermans, Minnie, 2477 Overlook Rd., Euclid Heights
Miller, C. L., 6237 Savannah Ave., Cincinnati
Money, Ella B., Landon School, 1955 W. 96th St., Cleveland
†Morgan, Edna, 2943 Berkshire Rd., Cleveland
Morgan, Elizabeth, Newberry School, Cor. Newberry and Stebbins, Toledo
Morrison, Janet, George Barber School, Akron
Myers, Mary E., 85 S. Adolph Ave., Akron
Neeley, Helen J., Central School, Berea
Nessle, Fannie B., 816 Nesslewood Ave., Toledo
Norris, Dorothy E., Board of Education, Cleveland
Norton, B. F., Garden Avenue School, Lorain
Oechsler, Hazel, Nathan Hale School, Shenandoah and Foster, Toledo
*Offerman, Kate M., Pemberville
Orr, Estelle B., 11706 Chesterfield Ave., Cleveland
Park, Olive, Mentor Headlands, Painesville
Parks, Mrs. Belle L., 1847 Knowles St., East Cleveland
Peaslee, L. D., Hartwell School, Cincinnati
Perkins, Hugh V., 3235 Euclid Heights Blvd., Cleveland Heights
Peters, Edith C., 654 E. 124th St., Cleveland
Peterson, Alta W., 1109 E. Ninth St., Salem
Pettit, Joseph E., Mayfair School, 13916 Mayfair Ave., East Cleveland
Phelps, Grace Clarke, 88 Linwood Ave., Columbus
Pinkerton, Leland C., McKee School, Findlay
Pittenger, Winifred, Pickett School, Toledo
Pluckebaum, Dorothy E., 347 Wood Ave., Cincinnati
Preston, E. M., Prospect School, East Cleveland
Quirk, W. A., Guilford School, Fourth and Ludlow Sts., Cincinnati
Rebert, Ruth E., 255 E. Midlothian Blvd., Youngstown
Reeve, E. P., Hyde Park School, Cincinnati
Renfrow, Omar W., 850 Ludlow, Cincinnati
Reszke, Felix E., Sands School, Cincinnati
Richey, R. C., 7501 Fair Park Ave., Cincinnati
Robinson, Glen L., West Fifth Street School, Mansfield
Rogers, Florence M., McKinley School, 1351 W. Clifton Blvd., Lakewood
Rook, Margaret Lou, 250 Crescent Dr., Akron
Ross, Eugene F., Clermont County, Branch Hill
Ross, Frances, Shafor Boulevard School, Oakwood, Dayton
Rupel, Maude L., 21 N. Torrence St., Dayton
Rush, Jean L., Watterson School, W. 74th St. and Detroit Ave., Cleveland
Ryan, Mary G., 2959 Meadowbrook Blvd., Cleveland
*Salisbury, Robert K., Elementary School, Terrace Park
Scheuerman, Alfred A., North Fairmont School, Baltimore Ave., Cincinnati
Schlotman, R. C., Heberle School, Cincinnati
Schneider, Elden E., 4907 E. 107th St., Garfield Heights, Cleveland
†Schroeder, Esther L., Raschig School, Parkway and Elm, Cincinnati
Schroeder, Henry, Winton Place School, Cincinnati
Schuh, Belle, 2104 Brookdale Rd., Toledo
Schullian, Augusta M., 1497 Mars Ave., Lakewood
Schwartz, Albert, Cummins School, Cincinnati
Schwarz, Katharine E., Parmly Hotel, Painesville
Secrist, C. C., 160 Parkwood Blvd., Mansfield
Sellers, Mrs. Hazel B., 25 Adelford Ave., Akron
Sharp, Lyda V., McKinley School, Steubenville
Shatzer, Owen M., R. D. 6, North Canton
Shively, Arthur W., Painesville
Sidle, Myrtle, 201 Newton Ave., N. W., Canton
Singer, Clara E., 3276 Chalfant Rd., Shaker Heights
Siringer, Meta L., 1451 Lincoln Ave., Lakewood
Skeels, Ruth, 1017 23rd St., Canton
Smith, John, Pleasant Ridge School, Cincinnati
Smith, Paul E., 1330 14th St., N. W., Canton
Snodgrass, C. B., 794 Roslyn Ave., Akron
Snyder, Belle, 1813 Oak Hill Ave., Youngstown
Snyder, John W., Fairview School, Warner and Stratford Aves., Cincinnati
Spence, A. Marie, 1908 Hampton Rd., Rocky River
Spetka, Roy, Bushnell School, Mansfield
Steele, Louisa, 50 N. High St., Athens
Stewart, Ethelyn, 2255 Rexwood Rd., Cleveland Heights
*Stewart, Martha A., 1777 Carlyon Rd., East Cleveland
Stough, Elizabeth, 2000 Cleveland Ave., N. W., Canton
Stratton, May B., Fullerton School, 5816 Fullerton Ave., Cleveland
Switzer, Mrs. Happy M., 1739 14th St., Cuyahoga Falls
Taylor, Eva, 1252 E. 115th St., Cleveland
Tefft, Edna, Watertown Rd., Marietta
Terrill, Maymie I., Victory Park School, South Euclid
Thomas, Crilla B., 125 W. College St., Oberlin
Thornton, Charles A., Moreland School, Lee Rd. and Moreland Blvd., Shaker Heights
Tole, Isabel, 110 Far Hills Ave., Dayton
Tracy, Kathleen, 532 Howell Ave., Cincinnati
Trew, Bessie D., 1000 12th St., N. W., Canton
Turnbull, Lilian, 1609 Third St., N. E., Canton
Ulrich, Robert P., Bellefontaine Public Schools, Bellefontaine
Vermillion, Kenneth R., 969 Brunswick Rd., Cleveland Heights
Voldan, Edna F., 3191 W. 31st St., Cleveland

Von Engeln, Dorothy, 140 La Belle St., Dayton
Waldron, J. Harley, S. Detroit St., Xenia
Walker, Helen, 1330 E. Broad St., Columbus
Warnking, May, Twenty-third District School, Cincinnati
Watson, N. M., East School, Lancaster
*Watts, M. P., Daniel Worley School, Canton
Waymire, Florence S., 244 Linden Ave., Dayton
Welch, Adelia, North School, Delaware
Wells, Bessie F., 130 E. 207th St., Cleveland
Wells, Lucy B., 937 Steubenville Ave., Cambridge
White, Mrs. Ethel S., 2628 Brookford Dr., Toledo
Williams, Ann Carol, 743 Lake Dr., Youngstown
Wilson, C. A., Avondale School, Cincinnati
Wilson, Isabel R., 384 Grand Ave., Akron
Wingert, S. Eva, 4940 Carnegie Ave., Cleveland
Wiseman, William, Glenview School, Glendale
Woodside, J. Barnes, Mentor Village School, Mentor
Wright, Pearl M., Clifton School, Clifton and McAlpin Aves., Cincinnati
Yunker, J. C., Harding Platoon School, 6145 Harding Ave., Portsmouth
Zapf, Sophie L., 1190 Carlyon Rd., East Cleveland
Ziska, Agnes, 3344 Meadowbrook Blvd., Cleveland Heights

OKLAHOMA

Adrean, Toner H., 804 Garfield St., Sand Springs
Akin, Emma E., 118 S. Creek, Drumright
Albers, R. L., Tuttle
Allison, Dwight S., 400 Delaware, Bartlesville
Armstrong, Louis E., 921 N. Eighth St., Durant
Bagley, Mrs. Jessie W., 708 E. 17th St., Ada
Bates, M. C., Lincoln School, El Reno
Beall, Ross, Lee School, Tulsa
Benfer, Mabel C., 417 Osage Ave., Bartlesville
Berkey, Mildred, 602 E. Bridge, Blackwell
Bogan, L. E., Supt. of Schools, Okay
Bowles, A. G., Jefferson School, Tulsa
*Brokaw, A. Willard, Irving School, Shawnee
Brookes, Virginia Jane, 733 Culbertson Dr., Oklahoma City
Calkins, May, Box 1655, Drumright
Cisco, Noah, 432 H St., S. W., Ardmore
Claiborne, E. W., 601 Osage, Bartlesville
Coffman, George W., 225 E St., S. E., Ardmore
Conner, J. Carl, 2215 N. Walker, Oklahoma City
*Coppers, A. E., 114 N. Tacoma, Tulsa
Costley, C. E., 2600 N. W. 15th, Oklahoma City
Couch, Mrs. Mary D., 1130 N. W. Tenth St., Oklahoma City
Dale, Etta D., 505 S. Rock Island Ave., El Reno
*Daniels, W. W., 1005 S. Wood, Hominy
Davis, J. T., Picher
Dean, Lillie, 2213 N. Shartel, Oklahoma City
†Denney, Earl C., Franklin School, Tulsa
Fritzson, Edith L., 1122½ N. W. 19th St., Oklahoma City
†Giles, O. A., 1348 S. Florence Ave., Tulsa
Gilmer, Juliette, 1106 N. W. 14th, Oklahoma City
Gray, W. E., Route 2, Marietta
Griffith, Harriet Louise, 414 N. W. 24th St., Oklahoma City
Griggs, O. C., 43 N. Wheeling St., Tulsa
Grove, Edith, 2646 N. W. 12th, Oklahoma City
Hairston, Esther, Washington School, Shawnee
Hamilton, Kate, Woodrow Wilson School, Shawnee
Hamm, Paul, 1118 Garfield, Sand Springs
Harris, Earl, Bethany
Haynes, J. Harold, 3307 E. Easton, Tulsa
*Head, Pearl, 104½ W. Broadway, Drumright
Heilman, Paul L., 2540 E. 14th Pl., Tulsa
Hodges, J. H., 3512 E. Archer, Tulsa
*Hooper, George J., Board of Education Bldg., Tulsa
Howe, Helen, 1313 N. McKinley, Oklahoma City
**Hudson, Jess S., 2823 E. Fifth St., Tulsa
Jester, C. L., 1412 E. 35th Pl., Tulsa
Kelly, Anna K., 506½ N. W. 25th St., Oklahoma City
Kennedy, Ralph H., 1908 W. 41st St., Tulsa
Koonce, B. E., 1415 S. Delaware Pl., Tulsa
Lackey, Guy A., Oklahoma Agricultural and Mechanical College, School of Education, Stillwater
La Mar, Esther, Roosevelt School, Okmulgee
Laughlin, Mrs. Blanche, 1429 N. E. 23rd St., Oklahoma City
Love, Mrs. Anna Burks, 2721 N. W. 24th St., Oklahoma City
McCarrell, E., 1128 N. E. 16th St., Oklahoma City
McCollum, R. E., 1427 N. Elwood, Tulsa
McGill, May, 505 West Elm., Enid
McMillan, Ethel, 31 W. 14th St., Oklahoma City
Magee, Maurice, 1115 S. Evanston St., Tulsa
Mason, C. C., Asst. Supt., Elementary Schools, Board of Education, Tulsa
Mayfield, Asa M., 907½ S. Macomb, El Reno
Moore, T. E., 2415 N. Boston, Tulsa
*Moorhouse, Mrs. Lulu D., 1120 W. Cherokee, Enid
Nelson, Mildred, 1443 E. Tenth St., Okmulgee
Norton, Mrs. Bonnie T., 508 N. W. 27th, Oklahoma City
Patman, Mrs. Carrie, 1021 S. Hoff, El Reno
Pauly, Frank R., 1815 E. 17th St., Tulsa
Peters, T. E., Franklin School, Shawnee
Phillips, Evert J., Whittier School, 1900 N. W. Tenth St., Oklahoma City
Pitts, Lena, 408 Beauclair Hotel, Okmulgee
Porter, Aline, Woodrow Wilson School, Enid
Price, Mrs. Fern, 1002 W. Maple, Enid
Ramsey, Alice, Route 6, Box 443, Tulsa
Redman, Clara, Antlers
Reid, Etta, Harrison School, Shawnee
Richards, A. L., 1901 S. Gray, Tulsa
Richie, Ellis B., 420 W. Grand, McAlester
Riechel, Adolphine, 422 E. 12th St., Okmulgee
Risher, Gladys, 1427 N. Market St., Shawnee
Roads, Elsie, 420 West State, Enid
Roberson, L. G., Box 388, Turley

Scott, J. Otis, 4314 Granger, Oklahoma City
Sherrod, Hal B., 1107 Delaware St., Perry
Smart, Jake, Route 1, Reed
Smith, A. J., 1156 Wallace, Shawnee
Smith, Levia Meyers, 1509 E. 14th St., Oklahoma City
Setzepfandt, A. O. H., 1547 S. Delaware Pl., Tulsa
Swan, Oliver J., 1210 S. Cheyenne, Tulsa
Timberlake, Beulah S., 312 Washington St., Stillwater
*Watson, Isabel, 706 Jennings, Bartlesville
Watts, Winifred, 408 Beauclair Apts., Okmulgee
Widner, Guy L., 217 N. Rosedale, Tulsa
Wood, Linnie R., Box 202, Bristow

OREGON

Alden Joseph A., Box 107, Kinzua
Alexander, Mrs. Alevia, 2134 S. E. 55th Ave., Portland
Ashcraft, Lyle J., Linnton School, Linnton Sta., Portland
Baker, N. A., Shattuck School, 1914 S. W. Park Ave., Portland
Blanton, H. B., Bly
Boyd, Charles H., 5825 N. E. Rodney Ave., Portland
Briedwell, Carlotta, Administration Office, Salem Public Schools, Salem
Brown, Elmer, Rose City Park School, 2334 N. E. 57th Ave., Portland
Christensen, Walter, Astor Junior High School, Astoria
Cram, W. A., Ainsworth School, 2425 S. W. Vista Ave., Portland
Craske, Fred H., Route 8, Box 425, Portland
De Graff, Grace, Kenton School, 7528 N. Fenwick St., Portland
Dorman, Hugh B., 5625 S. E. Morrison St., Portland
Ferguson, C. E., James John School, 7439 N. Charleston Ave., Portland
Finnie, Mrs. Alice, North Bend
Ford, W. I., 2645 N. E. 38th Ave., Portland
Freel, A. O., 4920 N. E. Cleveland Ave., Portland
Hall, E. S., 833 Military, Roseburg
Hanna, Mrs. Blanche E., 941 S. E. 55th Ave., Portland
Hoskin, Elbert L., Holladay School, 1343 N. E. Ninth Ave., Portland
Howard, C. A., State Supt. of Public Instruction, Salem
Hull, Bruce H., 2052 Darrow St., Klamath Falls
Hull, Mrs. Gussie, 1108 Jackson St., Oregon City
McCollom, Ivan M., Washington School, Veronia
Means, T. J., 410 W. 13th St., The Dalles
Miller, E. A., 1530 S. High St., Salem
Nelson, M. V., Sabin School, 4013 N. E. 18th Ave., Portland
Olson, A. C., Route 2, Box 126-E, Klamath Falls
Perry, C. E., Lents School, 5526 S. E. 92nd Ave., Portland
Petteys, W. A., 4007 S. E. 64th St., Portland
Prideaux, A. J., 5915 S. E. Taylor St., Portland
Rauch, L. May, Garfield School, Salem
Roberts, Cecil L., Route 3, Grants Pass
Roberts, L. D., 2930 N. E. Bryce St., Portland
Rush, Mabel E., 200 N. School St., Newberg
Schnebly, William Buford, John Gumm School, St. Helens
Shuey, Ada R., 1062 Adams St., Eugene
Swinney, Ruth, 435 Fowler St., Roseburg
Tallman, H. C., Beaumont School, 4043 N. E. Fremont, Portland
Waddill, D. T., Central School, Lakeview
Webb, Horton E., Buckman School, 320 S. E. 16th Ave., Portland
†Zook, Carl S., 7200 S. E. 60th Ave., Portland

PENNSYLVANIA

Adee, J. N., Glenside
Allen, Anna D., 909 Northampton St., Easton
Anderson, Robert J., 5322 Webster St., Philadelphia
Askin, Bessie D., Madison School, Milwaukee and Orion Sts., Pittsburgh
Baldwin, Lillian O., 1848 N. 16th St., Philadelphia
Barker, H. B., 124 S. High St., Fayette City
Bartine, Helen W., Ethan Allen School, Robbins and Battersby Sts., Philadelphia
Beach, Mrs. Gertrude S., 583 Abbottsford Ave., Philadelphia
Beachan, Mabel, 1110 Potter St., Chester
Beatty, C. Evelyn, Beechwood School, Rockland and Sebring Ave., Pittsburgh
Beichler, Mrs. C. M., Llanerch School, Llanerch
*†Berman, Samuel, 5336 N. Sydenham St., Philadelphia
Best, Elizabeth M., 414 Richland Ave., Dravosburg
Bevington, Mrs. Earna H., Buck Run School, Buck Run
Biswanger, Wilhelmina A., 1621 Harrison St., Philadelphia
Bjork, Ellen D., 37 Belleview Ave., Bradford
Blake, Celia J., 15 Monitor Ave., Ben Avon, Pittsburgh
Blessing, Louise, 4837 Lytle St., Pittsburgh
Bowers, Frances L., 1906 W. Tioga St., Philadelphia
Bowman, 325 Hiland Ave., Johnstown
Breeze, Mary P., 325 N. Craig, Pittsburgh
Breitwieser, William, 201 Summit Ave., Pittsburgh
Brewer, Karl M., 231 Dixon Ave., Du Bois
Bright, Nellie R., Joseph E. Hill Public School, Rittenhouse and McCallum Sts. Philadelphia
Brinser, Ira S., Nether Providence Public Schools, Wallingford
Byers, Benjamin H., Supt. of Schools, Box 38, Elizabeth
Carlin, Mary L., 943 Clara St., Houtzdale
Chambers, Raymond L., 24 W. Logan St., Philadelphia
Chase, Marie S., 2038 Master St., Philadelphia
Chase, Mrs. Miriam R., Soho School, Fifth Ave. near Brady St., Pittsburgh
Chew, Samuel L., Northwest School, 15th and Race Sts., Philadelphia
Choate, Ernest A., Kenderton School, 15th and Ontario, Philadelphia
Cochrane, George C., 225 E. Cliveden Ave., Philadelphia
Collins, Bessie Eleanor, 4910 Larchwood Ave., Philadelphia
Corey, Carolyn F., Conneaut Lake
Courtney, Grace A., 515 S. Aiken Ave., Pittsburgh
Craig, James C., Grant School, Bellevue
Creys, Lavina E., Harding School, Eighth and Lincoln Ave., Erie

Crumrine, M. Ella, 917 Chislett St., Pittsburgh
Dager, Mrs. Frances G., Assoc. Prof. of Elem. Educ., Beaver College for Women, Jenkintown
Dale, Ralph B., 1127 S. 52nd St., Philadelphia
Davenport, Ralph F., 136 Drexel Rd., Ardmore
*Dimmick, E. A., 207 Mabrick Ave., Pittsburgh
Dobbins, Thomas J., 531 Hansbury St., Philadelphia
Doyle, Florence A., Philadelphia Normal School, 13th and Spring Garden Sts., Philadelphia
†Dunleavy, Joseph M., 418 Breck St., Scranton
Eckard, Elizabeth T., 1957 69th Ave., Philadelphia
Edgar, Robert H., 531 Orchard Ave., Bellevue
Edwards, Nellie E., 1434 Chew St., Allentown
Eichler, G. A., Supt. of Public Schools, Northampton
Emrey, J. Thornton, 6121 Columbia Ave., Philadelphia
Emrey, Miles L., 6131 Columbia Ave., Philadelphia
Evans, Abel J., 5215 Chester Ave., Philadelphia
Evans, Mark M., Prospect St. and Second Ward Grade Schools, Brownsville
Evans, Walter P., 7246 N. 21st St., Philadelphia
Fels, Maurice, Garden Court, 47th and Pine Sts., Philadelphia
Fleischman, Charlotte C., D. Newlin Fell School, Ninth and Oregon Ave., Philadelphia
Flinn, May, 1025 McKean Ave., Donora
Foulkrod, Emily, 3910 Walnut St., Philadelphia.
Frable, Adam Q., 402 E. Goepp St., Bethlehem
Frank, T. Russell, Abington
Frankenfield, Ira M., 637 Center St., Bethlehem
Freider, Emma K., B. B. Comegys School, 51st and Greenway Ave., Philadelphia
Frew, Margaret A., 8540 Darlington Rd., Pittsburgh
Fromuth, Carl L., 808 W. Sedgwick St., Mt. Airy, Philadelphia
Froyd, Edna C., 218 Walnut St., Clearfield
Fugett, Joseph R., 120 E. Miner St., West Chester
Funk, M. Estelle, M. H. Stanton School, 16th and Cumberland Sts., Philadelphia
Galter, Israel, 3133 W. Columbia Ave., Philadelphia
Geedy, Calder B., 310 S. Brown St., Lewistown
Geiss, Newton W., Asst. Co. Supt. of Schools, Oley
Gibbs, Mary S., 350 W. Duval St., Germantown, Philadelphia
Gilland, Thomas M., Dir. of Training, State Teachers College, California
Ginsburg, Morris B., Adaire School, Palmer and Thompson Sts., Philadelphia
Gladfelter, Howard B., James Dobson School, Umbria and Hermitage St., Philadelphia
Goll, Reinhold W., 1830 W. Lindley Ave., Philadelphia
Graham, Martha M., 633 Linden Ave., Johnstown
Grasty, James H., 1708 W. Tenth St., Chester
Greenwood, Ella L., 308 Washington Ave., Charleroi
Grunizer, W. F., 301 Vine St., Johnstown
Gustafson, Mrs. Inez, 2017 West St., Munhall
Hagerty, Jean B., 1244 Christian St., Philadelphia
Hampton, Elsie D., Overlook School, 13th and Lindley Ave., Philadelphia
Hanlon, Beatrice, 121 Lenowee Ave., Monessen
Hanna, Edith B., 5700 Ogontz Ave., Philadelphia
Hardy, Marjorie, 221 Winona Ave., Philadelphia
Hart, Ida M., 5720 Thomas Ave., Philadelphia
Hart, John C., 538 Carey Ave., Wilkes-Barre
Hartzel, R. J., Third St., Bentleyville
Hay, Charles K., Thomas McKean School, 82nd and Tinicum Ave., Philadelphia
Hazlett, William W., Benjamin West School, Fourth St. below Lehigh Ave., Philadelphia
Heffernan, Elizabeth P., Fort Pitt School, Hillcrest St., Pittsburgh
Heidinger, Blanche L., 315 Lemonte St., Philadelphia
Hinkle, Thomas L., 576 James St., Hazelton
Hirth, Alice, Fifth Ward School, 317 E. Tenth Ave., Homestead
*Hoffman, J. G., 867 Napier Pl., Lawrence Park, Erie
Hood, Mrs. Vivian P., 529 Turner Ave., Drexel Hill
Horan, Agnes M., Creighton School, Tabor Rd. and Foulkrod St., Philadelphia
Horsman, Ralph D., Washington School, Mt. Lebanon, Pittsburgh
Hostetter, E. Juliet, 226 N. Franklin St., Hanover
Hughes, John H., Mill and Winton Rds., Upper Darby
Hurst, Florence B., 4034 Baring St., Philadelphia
Johnson, A. Bessie, 109 Wayne St., Warren
Jones, Mary F., Highland Park School, Upper Darby
Kaplan, William, 1649 N. Seventh St., Philadelphia
Katz, Samuel, Vaughan School, Marlborough North of Thompson St., Philadelphia
Kell, Jane F., 622 Linden Ave., York
Kelley, Florence A., Preston School, Martin Ave., Bryn Maur
Kelly, Robert J., Stowe School, 70th and Woodland Ave., Philadelphia
Kemp, Grace K., 2020 S. 16th St., Philadelphia
Kendall, Amy Marion, 449 E. Washington Lane, Germantown, Philadelphia
Kerns, Morey V., 2526 S. Cleveland St., Philadelphia
Kirk, Mabel E., 622 S. Allen St., State College
Kirk, S. Elisabeth, 3729 Bonsall Ave., Drexel Hill
Kiser, Leitha M., 48 Jerome Ave., Bradford
Klingel, Emma L., 314 E. 28th St., Erie
Knipe, Chester S., Hatfield
Krall, Helen, Boas School, Harrisburg
Laing, Iva B., 1207 Savannah Ave., Swissvale
**Laramy, William J., 2452 Merwood Lane, Upper Darby
Law, Aura, 307 E. Union St., Punxsutawney

Leslie, R. G., 505 Moore Ave., New Castle
Linn, Eva E., 829 N. 63rd St., Philadelphia
Liveright, Alice K., The Drake, 1512 Spruce St., Philadelphia
Lowman, Margaret Jane, 468 S. 11th St., Indiana
Lowry, Sarah N., 14 W. Jenkintown Rd., Glenside
Luckenbill, N. P., Freeland
Lytle, Annie, 745 N. Negley Ave., Pittsburgh
McBride, Russell W., 4000 Primrose Rd., Torresdale
McCracken, Mary A., 11 Brushton Ave., Pittsburgh
McCutcheon, Lyda B., Kirkwood Hotel Pittsburgh
McDowell, Stella D., 112 Race St., Edgewood
MacLaren, Roland T., 685 Fourth Ave., Williamsport
Mahoney, Anna B., 589 Baldwin St., Meadville
*Mahoney, D. J., 50 Westminster St., Wilkes-Barre
Major, Anthony J., 3104 Avalon St., Pittsburgh
Mann, Adda May, 120 Ruskin Ave., Pittsburgh
Marburger, Harold, Pattison St., Evans City
Maris, Mrs. Edith C., R. D. 2, Oil City
Martin, Jane B., 261 N. Dithridge St., Pittsburgh
Mates, James W., Hazelwood School, Second Ave., Pittsburgh
Mathews, Elizabeth A., Newportville
Michels, Veronica R., 149 Apsley St., Germantown, Philadelphia
Miller, Frank M., Jefferson School, Erie
Miller, J. Ross, 538 N. Mary St., Lancaster
Miller, Madge E., 320 Laurel St., Edgewood, Swissvale
Miller, Paul D., 7113 Boyer St., Philadelphia
Mills, Russel J., Elm Pl., Honesdale
Mitcheltree, Nannie L., Mahoning School, New Castle
Moore, J. F., 2346 Beaufort Ave., Pittsburgh
Morley, Christine C., Cardington Stonehurst School, Upper Darby
Morrison, Dora, 1802 Freemont St., McKeesport
Morse, Melvin E., 507 W. 28th St., Erie
Muellerstein, Minnie M., 721 E. 23rd St., Erie
Myers, Edward T., 5143 Oakland St., Philadelphia
Myers, Max, 6129 Ellsworth St., Philadelphia
Neill, John A., 420 Electric Ave., Lewistown
Nelson, Mary F., J. M. Conroy School, Pittsburgh
Noe, Elizabeth T., 3234 N. 16th St., Philadelphia
Nolin, Mary E., Hancock School, Seventh and Webster Aves., Pittsburgh
Norton, Florence E., 1125 Witherspoon Bldg., Philadelphia
Norton, Warren P., Supt. of Schools, Meadville
Notz, Hulda M., 4331 Dakota St., Pittsburgh
O'Connor, Mary, 501 Sassafras St., Erie
Owen, Ralph D., Temple University, Broad and Montgomery Ave., Philadelphia
Ott, E. D., Box B, Barnesboro
Parker, Sarah J., 706 Sproul St., Chester
Parson, Mrs. Edna Gray, 521 Maplewood Ave., Ambridge
Parry, Samuel D., Andrew J. Morrison School, Third and Duncannon Ave., Philadelphia
Payne, Edna P., 939 East End Ave., Wilkinsburg
Pearce, Milton O., Sheridan School, Ontario and G Sts., Philadelphia
Phillips, Earle W., 428 Rural Ave., Williamsport
Pierce, Charles B., Moore School, Brentwood, Philadelphia
Porter, Hugh L., Chatham School, 227 Bonvue St., Pittsburgh
Powers, Leversia L., 2416 Edgemont Ave., Chester
Price, A. W., Colver
Raup, Zura E., 128 Hepburn St., Milton
Reisse, George B., 5366 Wingohocking Ter., Germantown, Philadelphia
Rial, D. W., Frick Training School, Pittsburgh
Rieger, George W., Jr., James Russell Lowell School, Fifth and Nedro Ave., Philadelphia
Riegner, Rebecca W., Simon Muhr School, 12th and Allegheny Ave., Philadelphia
Robson, William K., 6614 N. Seventh St., Philadelphia
Rogers, William C., 6688 Ardleigh St., Philadelphia
Rohrer, Mary M., Hamilton Court, Ardmore
Ross, Anna, 310 Washington Rd., Pittsburgh
Rowland, Albert Lindsay, State Teachers College, Shippensburg
Russell, Mary L., Horace Mann School, Indiana
†Sacks, Solomon, 4827 N. Tenth St., Philadelphia
Sarver, Cyril C., Supvg. Prin., Hampton Twp. Schools, Allison Park
Sauerbier, May M., 409 N. Fifth St., Reading
Scheel, Elizabeth A., 242 W. Tabor Rd., Philadelphia
Schillinger, Alberta, 1308½ Louise St., Munhall
Schlegel, Albert C. W., Supvg. Prin. of Schools, Red Lion
Scorer, Sadie Mae, Box 404, Homestead
Shannon, James E., Forbes School, Forbes and Stevenson Sts., Pittsburgh
Sharlip, Mr. Lou N., 5058 N. Eighth St., Philadelphia
Sharpe, Mildred J., 304 Birmingham Ave., Pittsburgh
Sheaffer, C. C., 1512 Coursin St., McKeesport
Shoener, Elizabeth S., 154 W. Abbottsford Ave., Germantown, Philadelphia
Simpson, Ethel N., Essington School, Essington
Smith, Ruberta N., Benjamin R. Myers School, Elkins Park, Philadelphia
Soffel, Catherine A., 16 Greenbush St., Pittsburgh
Spangler, Thomas B. F., Jr., 6108 N. Seventh St., Philadelphia
Sprowles, M. Reba, 4833 Griscom St., Philadelphia
Staneruck, Bessie E., 654 E. Summit Ave., Philadelphia
Stark, Katherine I., 4733 Cedar Ave., Philadelphia
Steadman, H. L., Perry School, 29th and Cascade Sts., Erie
Steinberg, David L., 723 Glenview St., Philadelphia
Stevenson, Martha C., W. F. Harrity School, 56th and Christian Sts., Philadelphia
Stewart, Laura E., 123 E. Agnew Ave., Pittsburgh

Storey, Bernice L., 5728 Baum Blvd., Pittsburgh
Stravino, Jessie D., Box 544, Smithport
Symons, W. L., Manoa School, Upper Darby
Tennis, Marguerite, 38 N. Harwood Rd., Upper Darby
Thomas, Alfred, Administration Building, Lancaster
Thomas, Oscar D., 6160 Webster St., Philadelphia
Thompson, Irene A., 925 N. St. Clair St., Pittsburgh
Thornley, Mary, 5 Somerton Ave., Philadelphia
Tomb, Fannie B., 211 Walnut St., Latrobe
Truby, Charlotte C., Humboldt School, 20th and Sarah St., Pittsburgh
Ubinger, Magdalene, 114 Brownsville Rd., Pittsburgh
Ulrich, Foster G., Juliette Ave., Route 3, Lancaster
Veith, Charles F., 7034 Marsden St., Philadelphia
Waldman, John L., H. C. Lea School of Practice, 47th and Locust Sts., Philadelphia
Walker, Anna W., 5732 Spruce St., Philadelphia
Walker, James, Jr., 6039 Washington Ave., West Philadelphia
Warshaw, Harry A., Samuel J. Randall School, Ninth and Bainbridge Sts., Philadelphia
Watson, Jennie A., 3301 Walnut St., McKeesport
Wayman, Robert M., 322 E. Beau St., Washington
Webb, Ella P., 1525 Christian St., Philadelphia
Wetter, Allen H., 4324 Tyson St., Philadelphia
Wickersham, Mrs. Lillian M., 106 W. Oakdale Ave., Glenside
Williamson, Edith E., 22 Arbor St., Pittsburgh
Willis, Minnie C., Emerson School, Tenth and Cascade, Erie
Wolf, M., Elizabeth, 581 Moorhead Pl., Pittsburgh
Wolfe, Blanche, Henry A. Brown School, Sergeant and Jasper Sts., Philadelphia
Wright, Anne, Wissahickon School, Philadelphia
Wright, Louise, King Edward Apt., 4609 Bayard St., Pittsburgh
Yerkes, Helen K., 4957 Rubicam Ave., Philadelphia
Zahn, D. Willard, Barry School, 59th and Race St., Philadelphia
Ziegler, Florence L., Schuylkill Avenue Building, Reading

RHODE ISLAND

Baldwin, Elizabeth, Garden Street School, Pawtucket
Barry, Ursula M., 60 E. Manning St., Providence
Birch, Alida G., Kingston
Bray, Miss Marion B., 248 Webster Ave., Providence
Brogan, Marguerite, Bristol
Casey, Katherine L., 27 Claremont Ave., Providence
Dows, Arthur J., 150 Melrose St., Providence
Gillespie, Isabelle, Carolina, Richmond
McNally, Wayne W., Kenyon Street School, 99 Kenyon St., Providence
Moran, Laura A., 751 Hope St., Providence
Murray, Katherine M., 25 Hanover St., Providence
O'Connor, Margaret A. T., Roosevelt Street Elementary School, Providence
O'Connor, Mary E., Reservoir Avenue School, Providence
**Patt, Hermann George, John Clarke School, Newport
*Peabody, Robert W., 52 Edgewood Blvd., Providence
Quirk, Mary V., 15 Wheaton St., Warren
*Spurr, E. Blanche, 33 Washington St., Central Falls
Taylor, Barbara C., 9 Pleasant St., Newport
Thornton, Grace E., 11 Squanto St., Providence
True, Maud E., 127 Granite St., Westerly
Williams, Mary, John Howland School, 120 Cole Ave., Providence

SOUTH CAROLINA

Alcorn, Maurice, 1015 Wildwood Ave., Columbia
Chapman, R. C., 406 Arlington Ave., Greenville
Crayton, Nan, Hambrick School, Columbia
Davis, Miss Eddie L., 1317 N. Main St., Anderson
Dean, J. M., Norway
Flora, A. C., Supt. of Schools, Columbia
Fogarty, Simon, 151 Moultrie St., Charleston
Goforth, Preston C., Mt. Pleasant Academy, Mt. Pleasant
Goodwin, W. B., Box 10, Navy Yard
Hallman, E. B., Box 606, Spartanburg
Reeder, Gertrude, 1003 Caldwell St., Newberry
Van Landingham, Eva, Box 14, Easley
Varn, Guy L., Shandon School, Columbia
Voigt, Caroline, Logan School, Columbia
Ward, W. H., Supt. of Schools, Walterboro
Wideman, Frances, Victor School, Greer

SOUTH DAKOTA

Anderson, Laura B., 120 N. Duluth, Sioux Falls
Bach, B. Harrietta, Lowell School, Sioux Falls
Carpenter, Harriet, 415 S. Jay St., Aberdeen
*De Kraay, Henrietta, Box 18, Aberdeen
*Fastenau, Anna J., Box 191, Spearfish
Flanagan, Maude, King Apts., Mitchell
Haas, Grace, 1615 S. Minnesota Ave., Sioux Falls
*Hamilton, Isabelle, 121 Galena St., Lead
*Hinricks, Grace A., 816 Quincy St., Rapid City
Johnston, Maude E., 414 11th Ave., S. E., Aberdeen
Jones, Lottie M., 817 W. Fifth Ave., Mitchell
Laughlin, Bernice, 204 Seventh Ave., S. E., Aberdeen
Leistikow, Lydia M., 204 Seventh Ave., S. E., Aberdeen
**Linter, Annamae, 730½ S. Spring, Sioux Falls
McFarland, Mary, 605 W. Fourth St., Yankton
*Minard, Adah E., 141 Sixth St., N. E., Watertown
*Moore, Harriet C., Oglala Boarding School, Pine Ridge
Nelson, Nan M., Lincoln School, Sioux Falls
Newkirk, Rachel, Bancroft School, Sioux Falls
Rasmussen, Maud C., 920 S. Jay St., Aberdeen

Royhl, Ella M., 320 S. Prairie Ave., Sioux Falls
Sanger, Thora O., Eugene Field School, Mitchell
*Sell, Dora, 600 E. 21st St., Sioux Falls
Stallman, Elsie, 203 Prairie Ave., Sioux Falls
Stapleton, Mrs. B. T., 503 Oak Ave., S., Sioux Falls
*Thorpe, Cleata, 205 Colorado Ave., S. W., Huron
Venoss, Mabel, General Beadle School, Sioux Falls
*Wagner, Ruth, 704 S. Edmunds St., Mitchell
Welker, Jean, Irving School, Sioux Falls
Williams, Mary Ann, 619 N. Lincoln St., Aberdeen

TENNESSEE

Bailey, Carrie, 500 Walnut St., Paris
Bell, Nellie, 616 E. Brow Rd., Lookout Mountain
Brown, Emily P., Hemlock School, H. P. Ave. and E. 12th St., Chattanooga
Buckner, J. L., 951 Texas St., Memphis
Burke, Lottie C., 2715 Lombardy, Memphis
Carpenter, Clara E., 564 W. Shadowlawn Dr., Chattanooga
Cartwright, Priscilla, Ford N. Taylor School, Alice Ave. and Hernando Rd., Memphis
Dreyfus, Florence, 195 Angelus Pl., Memphis
Duyck, L. W., Giffin School, Knoxville
Griffin, Annie S., Cordova School, Cordova
Hickerson, Mrs. Jessie H., Sunnyside School, N. Germantown Rd., Chattanooga
Hinton, Janie, George R. James School, Collierville
Johnston, Thomas N., Staub School, Rose Ave., Knoxville
Kennedy, L. Blanche, 1240 Watauga St., Kingsport
Lotspeich, Mrs. R. D., 3322 Windsor Court, Chattanooga
Love, A., 1100 Mississippi Blvd., Memphis
Loy, H. G., Gibbs High School, Corryton
Lynk, W. A., 503 Alston Ave., Memphis
Markey, Pearl, 563 Mosby Ave., Memphis
Melson, Inda, 3614 Mynders Ave., Memphis
Pate, Florence, Lawler School, Memphis
Powell, L. R., 116 N. Bellevue St., Memphis
Self, Don, Kingsport
Smith, Biva, Academy St., Erwin
Southall, Maycie, George Peabody College for Teachers, Nashville
Sugg, Tom T., 307 Center Ave., Dickson
Thackston, John A., University of Tennessee, Knoxville
Underwood, R. H., 720 Parkway Ave., Fountain City
Welcker, Annette, 141 Gibbs Rd., Fountain City
Wells, Word, Poplar Pike, R. F. D. 5, Memphis

TEXAS

Adkins, W. J., Box 41, Borger
Arrington, Mrs. Empress, 3118 Douglas St., El Paso
Austin, Frank D., Franklin School, Tenth and Mobile, Port Arthur
Barton, E. R., 4601 Hamphill St., Ft. Worth
*Baskin, Mildred, 724 Baltimore Ave., San Antonio
Berry, Esther, Sam Houston School, Wichita Falls
Bird, Nettie, 2023 Mitchell, Waco
Birdsong, James W., Route 5, Winnsboro
*Bonner, Nettie, Robert E. Lee School, Corsicana
Boone, Mamie E., 132 E. 12th St., Dallas
Breeding, Alice, 310 W. Courtland Pl., San Antonio
*Bright, J. B., 211 Forest Ave., Cleburne
*Brightwell, Mamie, 3736 Lipscomb St., Ft. Worth
Brusse, Mrs. Bun Bates, 2702 Carolina Way, Houston
Buckley, J. L., 410 Kober St., Brenham
Buckmaster, Stella, 4924 Bryan St., Dallas
Budd, Harold, 6210 Reiger Ave., Dallas
Burgess, Kate, 1208 Scott Ave., Wichita Falls
Burke, Margaret E., 720 W. Popular St., San Antonio
Bush, A. S., Woodlawn School, 1700 W. Magnolia, San Antonio
Buttery, Nellie, Lamar Annex Hotel, Houston
Caradine, Jane, 2601 Barbee St., Houston
Carpenter, Nette, 426 Rigsby, San Antonio
Carraway, Alleen, 724 W. First Ave., Corsicana
†Clifton, H. Lee, 604 E. Fourth St., Burkburnett
Clifton, Mrs. J. A., 2734 Federal St., El Paso
Cogswell, Mrs. R. E., Dimmitt
Colding, Kate, 522 Fourth St., San Antonio
Cotten, Mrs. Claud D., Rural School Supervisor, Court House, San Angelo
Cox, Jewell, 3506 W. Fifth St., Ft. Worth
Crenshaw, George Samuel Parker, 3511 E. 27th St., Bryan
Daniel, Maud, 2425 McFerrin, Waco
**†Darnell, W. L., 201 E. 34th St., Austin
Darrow, Harriet, 822 N. 15th St., Waco
Davis, Eva Margaret, River Oaks Elementary School, Houston
Davis, J. M., 2945 Seventh St., Port Arthur
Davis, W. L., 2110 Hutchins St., Houston
DeChaumes, Helen C., 2203 San Jacinto St., Houston
Deffebach, Mrs. Amelia, 2614 Waits Ave., Ft. Worth
Dent, Charles, James S. Hogg School, Dallas
De Wees, W. O., 2412 Lipscomb St., Ft. Worth
Dobson, W. B., Dir. of Intermediate Education, Ft. Worth
Donovan, D. W., 2114 Tangley Rd., Houston
Douglass, Mrs. Louise W., 1918 Rosewood St., Houston
Dunn, Susie, 726 Sixth St., Port Arthur
Eaton, Mrs. Fronia, Bonham School, San Antonio
Eddins, A. W., 400 Kirk Pl., San Antonio
England, Byron, Travis School, Abilene
Eppler, Mamie, 2220 College Ave., Ft. Worth
Fagg, R. C., Box 1491, Midland
†Fertsch, L. M., 606 Highland Ave., Austin
Fisher, G. N., 3400 Purington St., Ft. Worth
Foster, A. N., Goose Creek
Garrett, Major T., Box 1081, Goose Creek
Gehring, Elsa, 2201 Bissonnet, Houston
Gibson, Louise, Bonham School, San Antonio
Gideon, S. E., 1906 Bennett, Dallas
Glasgow, B. W., 3600 Cedar Springs, Dallas
Glass, Nina B., Overlook Heights, Waco
*Gorbutt, Catherine, 625 W. Yandell Blvd., El Paso
Grady, Margaret, 5403 Gaston, Dallas
Grafton, E. G., 3916 Worth St., Dallas
Graves, Harold, 2806 Wilkinson, Ft. Worth

*Greer, Loula, 1351 Washington Blvd., Beaumont
Gregan, Mrs. Emmons S., 2300 Irving St., Beaumont
Grizzard, Mabel Youree, 711 W. Main St., Waxahachie
Hall, Susan J., Bonham School, San Antonio
Hamilton, William Anderson, City Park School, Dallas
Harris, J. F., 711 Clermont St., Dallas
*Harvey, A. D., Box 1255, Kingsville
Haynes, Ida, 301 E. Brown St., Ennis
Heilig, Irma, 815 W. Graig Pl., San Antonio
Herring, L. R., Box 605, Tyler
Higgins, Gertrude, 1015 N. Florence St., El Paso
*Hill, Frank B., 403 Ave. G, S. E., Childress
Hill, T. S., Young Elementary School, Ranger
Hilliard, H. M., Route 2, Wolfe City
Hirsch, Herman, 719 Ogden St., San Antonio
Hix, R. M., Elementary School, Hearne
Hobby, Louise, 2245 Neches St., Beaumont
Hoffman, H. G., 3223 Ave. H, Ft. Worth
Holden, P. H., 1820 Live Oak St., Houston
Houston, Josephine, 2508 Nueces St., Austin
Howard, Mrs. Lily, 541 W. Missouri, El Paso
Humphrey, Joe R., Supt., Public Schools, Olney
Jackson, Homer Herbert, 518 Keeler Ave., Dalhart
Jackson, W. R., Box 622, Dona
†Jacobs, R. C. T., 6419 Velasco Ave., Dallas
James, E. H., Box 844, Vernon
Jewell, Frances, 2632 Jeffries, Dallas
Johnson, Lula, Odem
*Johnson, Maud, Box 173, Rio Hondo
Johnson, Mrs. Maureen, Provident Heights School, 25th and Bosque, Waco
Johnston, Minnie L., 1524 Buena Vista St., San Antonio
Jordan, Roland C., Texas City
Jordt, Elsie B., 320 Maverick St., San Antonio
Kelly, J. F., John H. Reagan School, Dallas
Keeney, Mabel, 1903 N. Raynor St., El Paso
Lamb, H. L., Grim School, Texarkana
Langford, Nora, 721 Dickson St., Ft. Worth
Lantrip, Dora B., 4525 McKinney Ave., Houston
Lauderdale, R. D., 685 Palm St., Beaumont
*Lee, R. B., 1609 Seventh St., Brownwood
Leigh, R. E., 3006 La Branch, Houston
Lightsey, L. P., Artesia Wells
Liston, Leslie C., 623 Bismark St., Seguin
*Little, Wilson, 1840 N. Eighth St., Abilene
Lloyd, Jessica, 515 College Ave., Ft. Worth
Lloyd, S. M., 6126 Goliad, Dallas
Loos, A. J., 1615 Garden Dr., Dallas
McBride, Clara A., 611 Cypress St., Orange
McCorkle, Nelle, 6120 Gaston Ave., Dallas
McFarland, Adaline, 1313 Castle Court Blvd., Houston
McGhee, Mildred, West Ward, Box 1464, Borger
McNeill, Flora, Bonham School, San Antonio
MacMunn, Fannie, 723 Seventh St., Beaumont
Maetze, Pauline, Bonham School, San Antonio
Martin, Cora M., School of Education, The University of Texas, Austin
Martin, Howard H., Roger O. Mills School, Dallas
Massey, Miss McKimm, Box 463, Cameron
*Mathis, Franklin M., 212 Lindsey Lane, Tyler
Meek, Mrs. Florence A., Robert E. Lee School, Port Arthur
Meek, J. A., Baker School, Pampa
Melear, Grace, 1618 N. 15th St., Waco
Miller, Gladys, 2001 Western, Ft. Worth
Miller, Jacksey, Bonham School, San Antonio
Mitchell, Q. B., 947 Culebra Ave., San Antonio
†Montgomery, Florence, 1530 Sul Ross Ave., Houston
Moore, W. M., 1421 Washington Ave., Ft. Worth
Morris, C. W., J. L. Long School, Dallas
Morris, Meman H., 4127 Travis St., Dallas
Morse, Mrs. Alberta H., 1114 N. Ochoa, El Paso
Moynahan, Bess, Bonham School, San Antonio
Muse, E. W., 124 N. Edgefield, Dallas
Namendorf, Lavinia, 1508 Kane St., Houston
Nash, Corinne, 1912 Washington Ave., Waco
Nash, Mrs. J. B., Lamar School, San Antonio
Neal, Ellen, Rosebud
Neal, Elma A., 510 E. Dewey Pl., San Antonio
Nelson, Mollie R., Bonham School, San Antonio
Newby, W. B., Box 545, Temple
*Odom, I. N., 1425 S. Eighth St., Waco
Oehler, J. C., Jr., 5318 McComas, Dallas
O'Neil, Anne, De Zavala School, Houston
Owen, Hubert, 245 Sycamore St., Jacksonville
*Park, J. E., Alamo School, Wichita Falls
Parker, Lulu, 1420 W. Humbolt St., Ft. Worth
Pass, S. E., 1542 Orange St., Abilene
*Patrick, A. L., Sam Houston School, Pampa
Payne, Mrs. Bertha S., 225 W. 21st St., Houston
Payne, Mrs. Eunice R., 211 W. Rio Grande St., El Paso
Perry, Mrs. William A., 2237 North St., Beaumont
Phillips, Lillian, 1155 Elm St., El Paso
Pierce, Thomas E., Dir. of Elem. Education, High School Bldg., Big Springs
Piland, Effie, 3396 Highland Ave., Beaumont
Pool, Helen, 1180 Liveoak, Beaumont
Poppenwell, Mary Jo, 650 College St., Beaumont
*Porter, H. A., 600 Texas Ave., Austin
Preston, Eleanor, 1215 Brown St., El Paso
Pugh, L. L., Route 1, Box 207, Houston
Reagan, G. H., 1910 Mayflower, Dallas
Reed, J. C., Independent School District, Beaumont
Reilly, Margaret, 502 E. Eighth St., Austin
Rice, Bryant B., Box 1145, Conroe
Rice, Klifford, 1117 Hilton Hotel, El Paso
Rich, Allye, 2104 Hill Crest, Ft. Worth
Riddle, Marie Sue, 1210 Washington, Waco
Roberts, G. M., Box 803, Lamesa
Robinson, Marguerite A., 215 Parklane Dr., San Antonio
Schaper, Mamie Elsa, 1615 Washington Ave., Waco
Shulkey, B. O., Asst. Supt. of Schools, 3321 Rogers, Ft. Worth
Smart, Mrs. C. K., Magnolia School, Beaumont

Smith, Ella J., 1316 Clover Lane, Ft. Worth
Smith, Raymond A., Texas Christian University, Ft. Worth
Standish, Ella, 3320 Broadway, Houston
Stearns, Ellen K., Route 3, Box 17, Houston
Steele, Helen C., 1511 Hyde Park Blvd., Houston
Stephens, A. R., Amelia School, Route 1, Box 717, Beaumont
Stephenson, Zach T., 2240 Wrostan Rd., Houston
Stewart, Bessie L., Austin School, Wichita Falls
Stewart, Mrs. Emaline O., 2617 Yupon Dr., Houston
*Stolterfoht, Beatrice, 622 S. Carancahua St., Corpus Christi
Stone, Grace, 1600 N. 17th St., Waco
Stovall, Fanjane, Hardin Simmons College, Abilene
Stuart, Mrs. Amy E., 3911 Windsor Ave., Dallas
Studley, Mrs. Hattie, Bonham School, San Antonio
Swann, Alicia, 2931 Aurora St., El Paso
Tarlton, J. F., 1412 Dennis Ave., Ft. Worth
Tate, Willis, Alamo Heights Elementary School, San Antonio
†Tatum, Robert Theophulus, 711 Poplar St., Beaumont
*Thomas, Mrs. Alma, 110 South A St., Midland
Thomas, Lilla, 625 W. Yandell Blvd., El Paso
Thorne, Carl, O. M. Roberts School, Dallas
Utley, Marguerite, 800 Missouri Ave., Ft. Worth
Walker, E. D., James Bowie School, Dallas
Webb, H. P., Olton Public Schools, Olton
Wentworth, Thomas E., 501 Clairmont St., Ft. Worth
White, Tilman B., 2518 Kingston Dr., Houston
Whitmire, Mrs. Ruth, Route 3, Box 408-A Houston
Wilcox, S. P., Grapeland
Williams, T. C., 703 W. Eighth St., Cisco
Williamson, James E., Box 524, Freeport
Willis, S. T., 625 Hughes St., Ft. Worth
Wilson, Mrs. Olga, 2416 Montana, El Paso
Winniford, Mrs. May, 4909 Harrisburg, Houston
Wood, Edna Erle, Box 144, Olney
Woods, Mrs. Mabel T., Briscoe Elementary School, Houston
*†Wright, Mrs. Edith D., Hawthorne School, 1417 Houston Ave., Houston
*†Young, Miss Wayne, 2010 14th St., Port Arthur

UTAH

**Anderson, Lois, 1238 Bryan Ave., Salt Lake City
Bailey, W. H., Supt. of Schools, Manti
Brewer, Eva M., 1838 S. 15th, E., Salt Lake City
Bridgland, L. A., 1348 Princeton Ave., Salt Lake City
Brown, Florence G., Polk School, Ogden
Cooper, Henry R., 312 W. Center St., Logan
Craven, Ina E., Box 783, Ogden
Ferris, Olive, 813 Belvedere Apts., Salt Lake City
Fitzgerald, Gertrude, Box 783, Ogden
Folsom, H. B., Webster School, Salt Lake City
Forrester, Katherine S., 411 Belvedere Apts., Salt Lake City
Garff, H. N., 1534 Garfield Ave., Salt Lake City
Harris, J. J., 93 U St., Salt Lake City
Harris, Mr. Marion L., 1337 McClelland, Salt Lake City
Hendricks, Nellie U., 2324 Adams Ave., Ogden
Jensen, N. Howard, 45 N. One W., Tooele
Kelsey, Ella, 656 S. Fourth E., Salt Lake City
Kendell, Edith E., 928 E. 21st S., Salt Lake City
Kesler, A. B., 1155 Yale Ave., Salt Lake City
Layton, Margaret, Lowell School, 119 E St., Salt Lake City
Light, Edith M., 2636 Gramercy, Ogden
McCoy, Mrs. Evelyn R., Wasatch School, 1115 E. South Temple, Salt Lake City
Morgan, Margaret E., 3 Clifton Apts., Salt Lake City
Morris, Zeta, 223 W. North Temple, Salt Lake City
Nielson, Lester J., 724 Windsor St., Salt Lake City
Paxton, W. A., Fillmore
Peirce, M. June, Box 566, Ogden
Poulson, Frank G., 1521 S. Ninth E., Salt Lake City
Poulson, Fred N., Hawthorne School, 1632 S. Seventh E., Salt Lake City
Prosser, W. D., 627 S. First W., Salt Lake City
Ryberg, Edith, Onequa School, 513 N. Tenth W., Salt Lake City
Steele, Jesse F., High and Junior High School, Tooele
Stewart, I. Daniel, 740 E. Third S., Salt Lake City
Whelan, Lillian H., 411 Belvedere Apts., Salt Lake City
Young, Sara H., Ensign School, Salt Lake City

VERMONT

Sargent, William A., Meldon School, Rutland

VIRGINIA

†Adair, Cornelia S., 6208 Hawthorne, Richmond
Akin, Ellajoe, State Teachers College, East Radford
Bauserman, James E., Box 51, Fairfax
Berry, DeWitt C., 3203 First Ave., Richmond
Bibb, Mrs. E. K., 506 Moore St., Bristol
Blackwell, Lessie, Route 2, Richmond
Bleight, W. Carter, Chimborazo School, 33rd and Marshall Sts., Richmond
Brewbaker, J. J., 422 Westover Ave., Norfolk
Brown, Mrs. John S., Robert E. Lee School, 1017 Highland Ave., Bristol
Bryant, Alice G., Hampton Institute, Hampton
Buford, Florence, 1021 W. Main St., Charlottesville
*Burnley, Carrie C., 920 E. High St., Charlottesville
Butler, S. R., 1806 Farragut Ave., Norfolk
Carmichael, Omer, 1101 Court St., Lynchburg
†Clark, Norris B., Booker T. Washington School, Newport News
Dadmun, Charlotte, 418 W. 19th St., Norfolk
Dinwiddie, Sarah, Consolidated Rural School, Mitchells
Dodsworth, Mrs. J. E., Route 1, Box 389, Richmond

Dunaway, C. H., John B. Cary School, Richmond
Dunlap, Henrietta C., 24 Edmonson Ave., Lexington
Ellis, Elsie B., 3412 21st Ave., N., Arlington
Frayne, Mrs. Lucy B., 1112 Wise St., Lynchburg
Givens, C. B., Helen Dickinson School, Richmond
Goodwin, Mary A., Patrick Henry School, 3411 Semmes Ave., Richmond
Gorham, Mrs. Pauline C., Washington School, Alexandria
Harris, Mrs. Viola B., Virginia State College, Ettrick
Harrison, Lucille, 406-A N., Sheppard St., Richmond
*Harvey, M. Lizzie, Garland-Rodes School, Lynchburg
Hoge, Mrs. Dorothy, Mt. Vernon Elementary School, Alexandria
Holt, Lucy Mason, Ocean View School, Norfolk
Hook, Paul G., Moddy Public School, Clifton Forge
Howdershell, Mrs. J. N., R. F. D. 3, Alexandria
Hurt, Jemima C., 512 Campbell Ave., Roanoke
**†Johnson, Lillian M., 404 Chestnut St., Norfolk
Johnson, Lou Anna, 121 Mars St., Petersburg
†Joynes, Mrs. Edith B., 410 W. 14th St., Norfolk
Keeling, Lucy G., 319 W. Bute St., Norfolk
*Kellam, Mary R., Virginia Beach School, Virginia Beach
Lane, Bessie, Villa Heights School, Norfolk
Lawson, Lena E., 906 Campbell Ave., S. W., Roanoke
Le Grande, Anna D., Biggers School, Lynchburg
*Lewis, Mrs. Virginia S., Dupont School, Hopewell
Livermon, Ruth, Meadowbrook School, Norfolk
Lohman, Mrs. Florence Minor, 425 N. 31st St., Richmond
Malloy, Mrs. Florence B., 118 Mt. Pleasant Ave., Norfolk
Malloy, Mary L., R. E. Lee School, Petersburg
Marx, Mrs. E. M., 525 Graydon Pk., Norfolk
Massey, Mabel C., 405 Lincoln Ave., Roanoke
Miles, Agnes, Route 1, Petersburg
Moran, Sarepta A., Venable School, Charlottesville
Nixon, John L., 609 E. Leigh St., Richmond
*Ober, Merrill J., James Monroe School, 29th and Newport Ave., Norfolk
*Pope, Lona, McHerg Elementary School, Radford
Robertson, A. Zuleime, Nathaniel Bacon School, 35th and O Sts., Richmond
Robinson, M. P. S., James Madison School, Norfolk
Richardson, H. R., 31 Alexandria Ave., Alexandria
*Scott, Katherine K., Oak Grove School, 2200 Ingram Ave., Richmond
Scott, Lannie V., Stonewall Jackson School, Petersburg
*Sheppe, Mrs. A. L., 519 Lee St., Bristol
Simpson, Harriet L., West End School, Roanoke
Sinclair, Katherine L., City Point Court, Hopewell
Smith, R. L., Harrison School, Roanoke
Spies, Robina W., Ruffner School, 407 N. 12th St., Richmond
*Starritt, Bertha W., 1320 Chapman Ave., Roanoke
Stone, Clara, New River Depot
Swartz, Bessie, Bentonville
Taylor, Ethel L., Box 463, Newport News
Thompson, Ethel, 1000 W. Marshall St., Richmond
Thompson, T. Roger, John Marshall School, Newport News
Urquhart, Helen D., T. C. Miller School, Lynchburg
*Vaughn, Eva, Jefferson School, Pulaski
Walton, Mrs. Lily F., 206 W. Main St., Danville
*Wilson, Elsie E., Magruder School, Newport News
*Woodward, Mrs. Louis P., 318 S. Lee St., Alexandria
Wray, Charlotte D., 1106 W. Grace St., Richmond

WASHINGTON

Allen, E. M., Box 185, Monitor
Allen, Nell B., Box 35, Hoquiam
Allen, Zella E., 519 W. Ray St., Seattle
Arnold, E. O., 1127 Hoyt Ave., Everett
Bay, W. D., 202 N. Sixth St., Mt. Vernon
Beardsley, Albert R., 2223 F St., Vancouver
Benson, Mary Lou, Horace Mann School, Howard and Sharp Ave., Spokane
Blair, William A., Lafayette School, Seattle
Blauert, Arthur, Columbia School, Spokane
Boyington, Jo Mae, Wilson School, Spokane
Bowsher, Arthur E., Roeder School, Bellingham
Bradley, Florence, Lincoln School, W. 25 Fifth Ave., Spokane
Budde, Charles A., 3049 E. 94th, Seattle
Cassidy, H. A., Alki School, Seattle
Caughlan, J. C., Grade School Principal, Enumclaw
Chamberlin, L. B., Nob Hill School, R. R. 4, Yakima
Copeland, Eunice, 2020 Miller St., Seattle
Curtis, George R., 3102 N. Proctor St., Tacoma
Denman, H. W., Field School, Princeton Ave. and Ash St., Spokane
Dimmitt, Beniah, Brighton School, Seattle
Drake, Pauline, Washington School, Spokane
*Dunham, Cecil J., Whitman School, Wenatchee
Durham, M. E., Pacific School, Seattle
Elder, Raymond W., Maple School, Lucille St. and 17th Ave., S. W., Seattle
English, Elsie, Lincoln Grade School, Tacoma
Erickson, Howard, Concord School, Concord St. and Eighth Ave., S., Seattle
*Evans, E. H., Lincoln School, Everett
Farnsworth, Mabel V., W. 738 Park Pl. Spokane
Farrar, Frank, 4703 11th Ave., N. E., Seattle
Fitzgerald, Marie, Hutton School, 901 Plateau Rd., Spokane
Forsyth, Lydia E., Dunlap School, Seattle
Fowler, Ivan A., 620 N. Alder, Aberdeen
Glover, O. K., 1811 Shelby St., Seattle
Goldback, H. K., Laurelhurst School, Seattle

Graham, Charlotte, 1007 E. Marion, Seattle
Guthrie, Viletta H., Stevens School, 418 Fifth St., Wenatchee
Hamber, Nona, 1216 W. 13th St., Spokane
Hanson, Orlando M., Lowell School, Seattle
Hart, Emma C., 1205 Spring St., Seattle
Heaton, O. E., Logan School, Spokane
Hebeler, Amanda, Dir. of Training, Washington State Normal School, Ellensburg
Hemenway, Julia S., Kennewick Elementary School, Kennewick
Hemphill, Lena, Martha Washington School, 57th Ave., S. and Holly St., Seattle
Henderson, Frank D., Central School, Seventh Ave. and Madison St., Seattle
Henderson, Grace Clara, Loyal Heights School, Seattle
Hermann, Ida M., 845 Bellevue Ave., N., Seattle
Herren, Dora S., Montlake School, Seattle
Hoagland, Lois E., Box 324, Omak
Horrall, Pansy, 3612 Grand Blvd., Spokane
Johnson, Elsie Marian, Paul Apts., Vancouver
Kelly, L. Maxine, 326 Queen Anne Ave., Seattle
Knaack, R. H., Bemiss School, Bridgeport and Stone, Spokane
Knutson, K. J., T. T. Minor School, Seattle
Lacy, Susan M., 204 Euclid Ave., Spokane
Langley, Rosa A., Sheridan School, Spokane
Larrabee, Emma D., F. A. McDonald School, Latona Ave. and E. 54th., Seattle
Lowman, J. Guy, Whittier School, 5703 Palatine, Seattle
McClincy, Eleanor, E. 1116 Fifth Ave., Spokane
McClure, Worth, Supt. of Schools, Seattle
McDonnell, E. L., Jefferson School, Seattle
McIlravy, Frank D., 1433 38th Ave., Seattle
McKenzie, Clara E., Columbia School, Ferdinand and 37th Ave., S., Seattle
Mackintosh, John J., Webster School, Seattle
Mader, Clara E., E. 1110 Fifth Ave., Spokane
Mahon, Ada J., 942 27th Ave., Seattle
Marquette, Elizabeth, Latona School, E. 42nd and Fourth, N. E., Seattle
Martin, Sarah A., 1920 Broadway, Vancouver
Matheson, Anna May, West Queen Anne School, 900 Queen Anne Ave., Seattle
Melvin, Belle, Box 481, Everett
Meyer, Florence, S. 1323 Browne, Spokane
Mohney, Ruth, Pacific Hotel, Spokane
Most, Ida D., 607 Cleveland Ave., Spokane
Neiswender, J. A., Route 8, Box 636, Seattle
Nettleton, Lulie, 2815 Boylston, N., Seattle
Norby, Theo J., 3400 E. Tenth, Vancouver
Oliver, Fred L., Route 2, Box 20, Kelso
O'Neil, Helen C., W. 2012 Third Ave., Spokane
Palmer, J. Lee, E. 1415 14th Ave., Spokane
**Parker, Isabelle C., S. 180 Cannon St., Spokane
Perry, Bella, Youngstown School, Seattle
Petite, J. Edward, J. B. Allen School, Seattle
Pierron, Richard P., 2205 Washington St., Bellingham
Pinckney, Paul W., Columbia School, Bellingham
Pratt, Orville C., Supt. of Schools, Spokane
Purinton, Estelle, Holmes School, Cochran and Sharp Sts., Spokane
Radcliffe, W. O. E., Roosevelt School, 437 21st St., Bellingham
Reeves, Lester L., 3843 Ashworth Ave., Seattle
Richardson, Margaret, S. 180 Cannon St., Spokane
Robinson, Beatrice, 1308 22nd St., Everett
Roblee, Lester R., 506 N. 71st St., Seattle
Selby, Kenneth, University Heights School, Seattle
*Shambley, Robert, Rock Street Apts., Centralia
Shannon, J. F., 23 S. King St., Seattle
Smith, Byron B., 9021 View Ave., Seattle
*Smith, Gerald, 2008 Broadway, Vancouver
Smith, Herman, 3921 Linden St., Seattle
Smith, Lila, Whitman School, Spokane
Stanton, Edgar A., 3302 E. Mercer St., Seattle
Stoecker, Mamie B., McGilbra School, Seattle
Strite, Adelaide, W. 207 23rd Ave., Spokane
Swedine, Elmer, 4105 Brooklyn Ave., Seattle
Tanner, Blanche, Highland Park School, 2815 Boylston, Seattle
Tharp, Elizabeth, Waldorf Hotel, Seattle
Thomson, John A., 130 Garden Ave., Renton
Thune, Elmer T., 3115 N. 29th, Tacoma
Towner, Earl M., 5719 38th Ave., N. E., Seattle
Travis, Ivan, Box 757, Kirkland
Turnbull, F. A., 1812 W. Sixth St., Aberdeen
Turner, Bess, Franklin School, 17th and Mt. Vernon Sts., Spokane
Vetting, Ida F., 305 Bellevue Ave., N., Seattle
Warren, J. S., Garfield School, Spokane
Weisman, Frances, S. 726 Jefferson St., Spokane
Weisman, Sara E., S. 726 Jefferson St., Spokane
Welden, Carrie R., 3317 N. Audubon, Spokane
*White, Clara A., Roosevelt School, Yakima
Wilson, Mabel V., Laurelhurst School, E. 45th and 46th St., N. E., Seattle
Witt, Lena E., 328 W. Eighth Ave., Spokane

WEST VIRGINIA

Artrip, J. B., Miller School, Huntington
Auvil, G. G., Mercer Street Grade School, Princeton
Bailey, Dallas C., 820 Hood Ave., Shinnston
Barrett, Mary T., 522 Elm St., Huntington
Bias, Mrs. Nettie, 1814 Seventh Ave., Huntington
Black, S. J., Le Sage
Blake, Geneva, Milton
Boster, J. M., Lower Greenbottom School, Le Sage
Brake, Clifford, Route 3, Buchannon
*Brooks, R. F., 2142 Ninth Ave., Huntington
*Brown, Stanley, 155 Camden Ave., Buckhannon
Calloway, Mrs. Ruth, 1025 Ninth St., Huntington
*Carey, Fred M., Westmoreland Elementary School, Huntington

Carmichael, H. E., 1305 Sixth St., Moundsville
Cartle, C. H., R. R. 4, Huntington
Chapman, Clara, Milton
Chapman, Guy M., 928 23rd St., Huntington
Childress, Emma, 1670 Fifth Ave., Huntington
Christian, Walter V., 2714 Highlawn Ave., Huntington
Colabrese, Felix A., Albert
Collins, Virgel, R. R. 1, Milton
*Dent, Mrs. Geraldine S., Prin., Grades and Junior High, Spencer
Dilworth, Mrs. Minnie F., 1351 13th St., Huntington
Dodd, M. R., Thomas Jefferson Junior High School, Charleston
Dodrill, Allen, R. D. 1, Wellsburg
Doss, Harvey J., Route 2, Box 69, Huntington
Drummond, Myron, Barboursville
Evans, A. F., Le Sage
Fette, Bertha M., Washington School, 501 Main St., Wheeling
Fife, L. K., R. R. 4, Huntington
Fizer, M. Z., Culloden
Freeman, Alice, Emmons School, 401 28th St., Huntington
Garrett, Wilburn, Culloden
Gates, Cecil R., Second Ward School, Morgantown
Gillespie, Margaret, 165 Ricketts Pl., Huntington
Glover, Gertrude, 306 Washington St., Charleston
*Gray, Rex C., West Union
†Grose, Mary V., Craigsville
Hall, Mrs. H. C., 2221 Tenth Ave., Huntington
Harper, Fay, Montcoal
*Harpold, George W., Ripley
Hatfield, Orlan, Beatrice
Hensley, Myron, 220 Seventh Ave., Huntington
James, E. W., Lawton
Jamison, Mrs. Robert, Emmons Apts., Huntington
Johnson, LeRoy, 618 W. Third Ave., Huntington
Kline, David H., 2142 Ninth Ave., Huntington
Lasley, Mrs. Flora B., Box 398, Point Pleasant
Lee, C. W., 721 Fifth St., W., Huntington
Licklider, Bessie B., Kanawha School, Charleston
Lilly, F. E., Milton
Lilly, Franklin, Grandview Grade School, Grandview
Lilly, Paris I., 220 Center St., Princeton
Lohse, Minnie K., 2143 Market St., Wheeling
Long, C. Darl, 2956 Staunton Rd., Huntington
Lowry, H. D., 2865 Collis Ave., Huntington
McCue, E. B., Thorpe Public School, Thorpe
McDermott, A. H., Milton
McGinnis, W. F., Box 181, Milton
*McKisson, Elsie A., Main Street School, Sisterville
Matheny, Charles L., Route 27, Parkersburg
Moore, Iva L., 2751 First Ave., Huntington
Morris, F. E., Barboursville
Mowry, Hazel S., 9 Riverside Dr., South Charleston
Newman, Winifred, 211 Beauregard St., Charleston
Niffen, Myra, Keyser
Odgers, H. E., 804 Fairmont Ave., Fairmont
Porter, Sarah, 210 Ash Ave., Moundsville
Powers, Orville, R. R. 2, Huntington
Preston, Edna B., 2577 Collis Ave., Huntington
Reed, J. H., Ingleside Ave., White Sulphur Springs
**†Richards, R. H., 1201 Third St., W., Huntington
Robinson, Fred D., 308 Kirby St., Grafton
Robinson, Lucy A., Towers School, Clarksburg
Sanford, Alice W., 1111 Fifth St., Moundsville
Scarff, Dora W., 425 11th St., Huntington
Scharf, Estella M., 37 Greenwood Ave., Wheeling
Smith, Rex M., 834 College Ave., Morgantown
Swann, Mrs. Myrtle, R. R. 1, Barboursville
Walker, Q. E., Barboursville
Wilkinson, Renick, Wayne
Wilson, Grace, Gallaher School, Huntington
Wood, Jennie A., 446 Sixth Ave., Huntington
Wright, J. Leo, 1814 Sixth Ave., Huntington
Wyatt, Marion, 1428 Fifth Ave., Huntington
Zeiler, Melissa, Box 67, Vivian

WISCONSIN

Almy, Shirley D., Lapham School, 1432 E. Dayton St., Madison
Anderson, William V., Seventh Ward School, Fifth Ave., Eau Claire
Armstrong, Miss Nano E., Lee School Milwaukee
Atwood, Abbie A., 209 S. Jackson St., Janesville
†Axtell, Annie D., 229 Clifford Court, Madison
†Ballou, Ethel L., 2338 Ogden Ave., Superior
Becher, William O., 2219 S. Fifth St., Milwaukee
†Benson, Josephine E., 202 E. Eighth St., Superior
Berto, Thomas J., 2130 W. Center St., Milwaukee
Best, Margaret M., 209 Wisconsin St., Port Washington
Bickler, Peter, 615 N. 28th St., Milwaukee
Birong, V. T., 2222 N. 71st St., Wauwatosa
Birr, O. A., North Ninth Street School, N. Ninth at W. Vine St., Milwaukee
†Boyce, Thomas W., Cass Street Rotary School, 1647 N. Cass St., Milwaukee
Boyington, Georgiana, 407 Third Ave., N., Hurley
Brill, Laura, Silver Spring School, 5073 N. Green Bay Ave., Milwaukee
Brooks, George F., Supt. of Schools, Merrill
Buboltz, William F., 3000 N. Murray Ave., Milwaukee
Campbell, Sue, Hogan School, 803 East Ave., S., La Crosse
Chapin, Daisy W., Cunningham School, Beloit
Clark, John A., 4504 W. Montana St., Milwaukee
Cleary, Margaret E., Washington School, West Allis
Clock, Lucile, 1626 Madison St., Madison
Colbert, Cecilia A., 2325 N. 50th St., Milwaukee
Derse, Robert M., 6610 W. Capitol Dr., Milwaukee

Dougherty, Ruth M., 440 Chippewa St., Eau Claire
Ehlert, Edward, McKinley Elementary School, Manitowoc
Engelke, Walter W., 621 Crandall St., Madison
Fleming, Vera A., 800 Wisconsin Ave., Beloit
Fritschel, Max C., Jr., 1516 W. Forest Home Ave., Milwaukee
**Gardner, Ethel M., 816-A S. 21st St., Milwaukee
Geil, Phillip H., 2941 S. Wentworth Ave., Milwaukee
Gesell, O. W., Henry Clay School, 1144 E. Henry Clay St., Milwaukee
Hagen, Marie E., 325 W. Main St., Madison
Hahn, William H., Thirty-eighth Street School, 38th and Clarke Sts., Milwaukee
Heffernan, Jesse E., 2112 S. Ninth St., Sheboygan
Hein, Fred W., Walter Allen School, 1657 S. Third St., Milwaukee
Hoole, Patricia, 932 S. 60th St., West Allis
Horton, S. C., 8007 Warren Ave., Wauwatosa
Houston, Walter C., Twelfth Street School, 2669 N. 12th St., Milwaukee
Howard, Virgie M., 8509 Stickney Ave., Wauwatosa
Jones, J. E., 3703 E. Allerton Ave., Cudahy
Jones, Renette, 410 W. Wilson St., Madison
Kappelman, Mary, 1312 N. 27th St., Milwaukee
Kaross, Ella B., North Fratney Street School, 3255 N. Fratney St., Milwaukee
Karst, Walter Fay, 2151 N. 73rd St., Wauwatosa
Kavanaugh, Katherine, 3950 N. Farwell Ave., Milwaukee
Kellar, Laura E., 1918 E. Menlo Blvd., Milwaukee
Kibbe, Delia E., State Dept. of Public Instruction, Madison
Knoelk, William C., 1111 N. Tenth St., Milwaukee
Kolb, Philip A., 1850 N. 73rd St., Wauwatosa
Kottnauer, Annette, 4038 N. 24th Pl., Milwaukee
Krebs, Iva M., 2980 S. 50th St., Milwaukee
La Budde, Frank, 1535 N. 40th St., Milwaukee
Laiser, Paul L., Court House, Juneau
Lantry, Alice F., 1924 E. Park Pl., Milwaukee
Leard, Margaret, North Bartlett Avenue School, Milwaukee
Leiser, Else, 1242 N. 16th St., Milwaukee
Leistikow, G., High School, Winneconne
Leroux, Pearl, Doty School, Madison
Loveland, Lena, Wright Street School, 5522 W. Wright St., Milwaukee
Lowe, O. H., 502 Bluff Ave., Sheboygan
Luening, Edwin G., 2160 N. 60th St., Milwaukee
Lutze, Charles F., 801 S. 15th St., Sheboygan
McCabe, Amber, 721 Oakland Ave., Waukesha
†McCormick, Elizabeth R., Howe School, Cor. 23rd St., N., and Banks Ave., Superior
Manion, M. E., 19 Cottage Ave., Fond Du Lac
Marks, Hannah, 920 E. Mason St., Milwaukee
Meyer, F. Clifford, 833 Main St., Racine
Millmann, Anna, 6025 W. Adker St., Milwaukee
Milnitz, Lillie, Tippecanoe School, Milwaukee
Moffett, Mae, East Hartford Avenue School, 2227 E. Hartford Ave., Milwaukee
Morse, Alice C., Dover Street School, 619 E. Dover St., Milwaukee
Mumm, Edna E., 830 Harrison Ave., Beloit
Neubauer, Paul F., 1210 W. Mineral St., Milwaukee
Nichols, William E., 387 Waugoo St., Oshkosh
O'Connell, Thomas F., 2308 W. Nash St., Milwaukee
Oesau, Theodore J., 2544 N. 41st St., Milwaukee
Olson, Landa R., 733 Georgia Ave., Sheboygan
Osius, William F., 309 E. Howard Ave., Milwaukee
Owens, Sadie L., Binner School, Milwaukee
Parizak, Liel, 803 Derby Lane, Route 6, Green Bay
Parrott, Jessie, R. R. 4, Box 49, Merrill
Parsons, Emily R., 15 N. Webster St., Madison
Payne, Florence I., Lapham Park School, Wauwatosa
Pierce, A. K., 2211 S. 60th St., West Allis
Powell, Harley J., Mt. Horeb
Pranke, Helen M., Garden Holmes School, 4456 N. Teutonia Ave., Milwaukee
Pratt, Velmer D., 2303 E. Washington Ave., Madison
Ralph, H. Thoburn, Washington School, 2166 N. 68th St., Wauwatosa
Regan, Julia A., 2209 N. 26th St., Milwaukee
Reichert, C. Lorena, 2134 Keyes Ave., Madison
Rogers, Barton J., 110 Locust St., Oconomowoc
Rood, Mrs. Alice E., Randall School, Madison
Rothlisberg, Priscilla, 430 Grand Ave., Merrill
Schleck, Leo P., Emerson School, Madison
Schnell, Fred S., 2722 Highland Ter., Sheboygan
Schnell, Henry S., Mitchell School, 1728 S. 23rd St., Milwaukee
Schriver, George H., 320 Douglas St., New London
Schwartz, Carrie E., Humboldt Park School, 3230 S. Adams Ave., Milwaukee
†Shaw, George E., 1605 John Ave., Superior
Smithyman, W. Lincoln, William McKinley School, 1306 N. 21st St., Milwaukee
Sperling, Hugo E., 1311 Maryland Ave., Sheboygan
Swartz, David L., 5436 N. 35th St., Milwaukee
Tabert, Anna H., Mary Hill School, 529 N. 27th St., Milwaukee
Thies, Lillian C., 1943 E. Trowbridge, Milwaukee
Van Heuklom, George E., Supt. of Schools, Box 857, Mellen
Webster, B. T., Public School, Rosendale
Weiss, Mrs. Edith, 102 Fourth St., White Water
Weltzien, Lena M., 1548 S. Second St., Milwaukee
Williams, Howard J., 3003 N. 52nd St., Milwaukee
Zeiler, Edward J., 5070 N. Hollywood Ave., Milwaukee

WYOMING

**Chambers, Margaret J., Grant School, Casper

†Dean, Blanca, Box 330, Rawlins
Dunlap, Mrs. Nona Udell, Willard School, Casper
Eddleman, Minnie L., Box 644, Casper
England, Mrs. Martha Shelby, Lincoln and Roosevelt Schools, Casper
Follstad, Margaret, Box 908, Midwest
McLaughlin, Eleanor, McKinley School, Casper
Rains, F. Omer, Ft. Washakie
Robertson, Edith, Box 620, Green River
Stinson, Adelle T., Jefferson School, Casper
Thacker, Eula J., Box 314, Evanston
Winter, Mae I., Park School, Casper
Woodle, Mozelle, Harding School, Casper

ALASKA

Armstrong, Philip C., Prin., Elementary and High School, Longwood School, Kodiak
Berges, Homer, Supt. of Schools, Haines
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**Karnes, Anthony E., Commissioner of Education, Juneau
Kelly, Hobart R., Supt. of Schools, Box A-10, Ketchikan
Ripley, J. Loyd, Buckland
Thuma, Harold L., Palmer
Westall, A. J., Cordova
Wright, Ralph G., Box 1314, Ketchikan

CANADA

Stafford, Harold D., Box 24, Kimberly, British Columbia
Wheable, G. A., Board of Education, London, Ontario

HAWAII

Angus, Myra W., Pohukaina School, Pohukaina and Keawe Sts., Honolulu
Auld, Lily K., Pahala
Bachman, Ross, Maunaloa, Molokai
*Beers, Mrs. Maud O., Kapiolani School, Box 646, Hilo
Benson, E. C., Kahuku School, Kahuku, Oahu
Bohenberg, Rebecca, 506 Waianuenue Ave., Hilo
Boyum, Louise V., Wailuku Elementary School, Wailuku, Maui
**Brown, Elmer A., Kuhio School, Honolulu
Carter, Mrs. Alice Armeda, Waipahu School, Waipahu, Oahu
Clopton, Robert W., Kaumana School, Hilo
*Dostal, Joseph, Kaunakakai School, Kaunakakai, Molokai
*Dotts, Cecil K., Elementary School, Pahala, Kau
*Dyson, Clarence B., Box 53, Aiea, Oahu
Engle, Mary Ella, 1095 Spencer St., Honolulu
Faulkner, Robert Mardis, Kawananakoa School, Honolulu
*Fleming, Mary Elspeth, Paia School, Paia, Maui
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Giugni, Mrs. Kealoha H., Pearl City School, Pearl City, Oahu
Haia, William P., Hana School, Hana, Maui
Hendry, Mrs. Robert, 3015 Kalakaua Ave., Honolulu
Hobby, Mrs. Eleanor C., Eleele School, Box 255, Eleele, Kauai
Holtberg, Myrtle H., Robello School, Honolulu
*Hugelen, Reinhart L., Paauilo School, Paauilo
Inaba, Albert Y., Kilohana School, Box 34, Pukoo, Molokai
Kekapa, William K., 1219 Center St., Honolulu
Kellogg, Eleanor A., Ewa School, Ewa, Oahu
†Lacy, Mrs. Mabel V., 3440 Leahi Ave., Honolulu
Lai, Mrs. Carlotta Stewart, Hanamaulu School, Hanamaulu, Kauai
Lecker, George T., Laie School, Laie, Oahu
Loper, W. Harold, 1411 Alapai St., Honolulu
*†Luiz, John C., Waialae School, 19th and Harding Aves., Honolulu
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INDIA

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School District No. 3, P. B. Hanawalt, Supt., Box 327, Puyallup, Wash.
Department of Education, University of Washington, 113 Education Hall, Seattle, Wash.
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Bonifacio Teachers Club, Bonifacio Elementary School, Manila, P. I.
The Superintendent City Schools, Box 772, Manila, P. I.

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